

SAMSUNG

WF-F125NC/YLW  
WF-F105NV/YLW

BASIC MODEL  
WF-F125AC/YLP

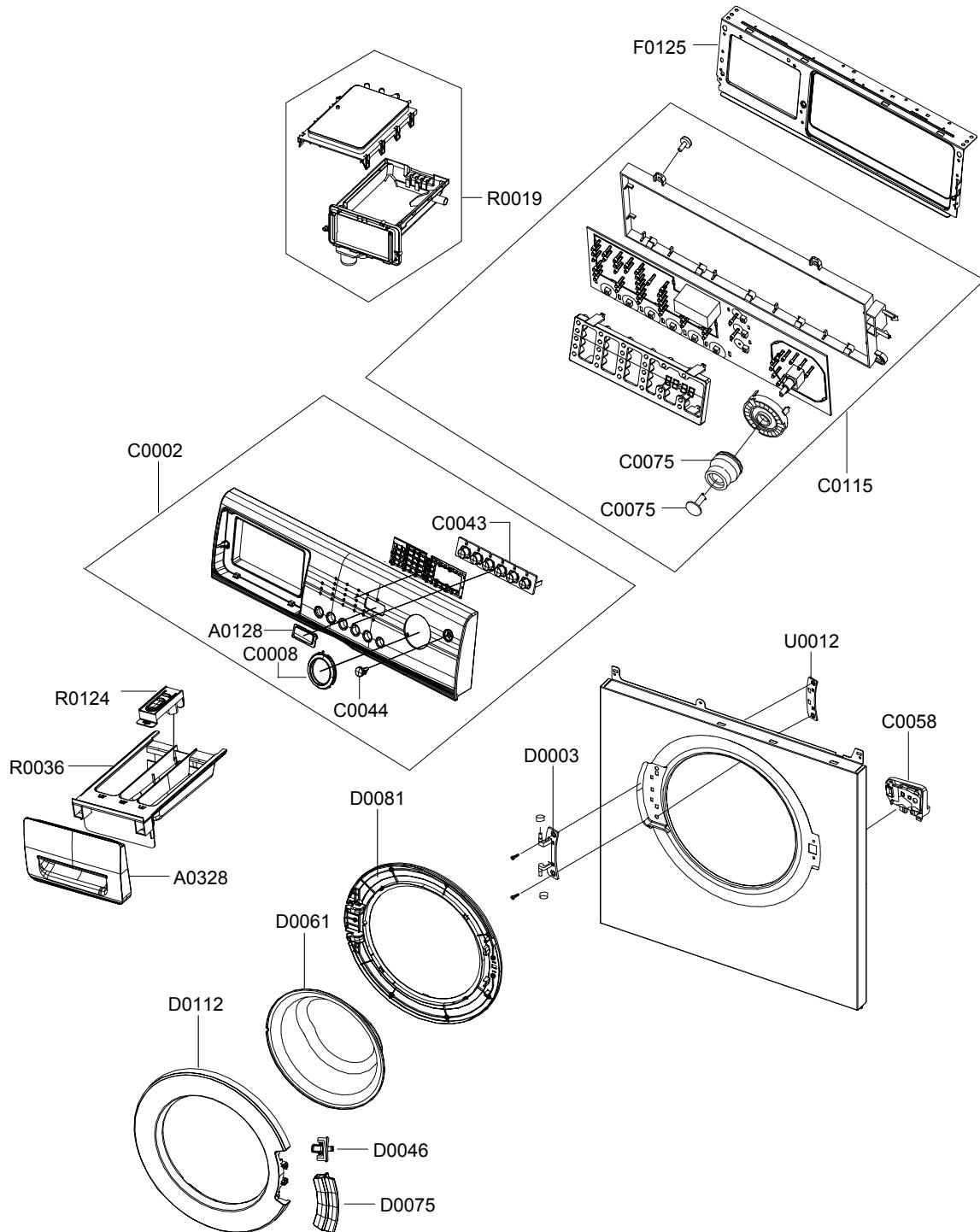
# SERVICE Manual

F125NC

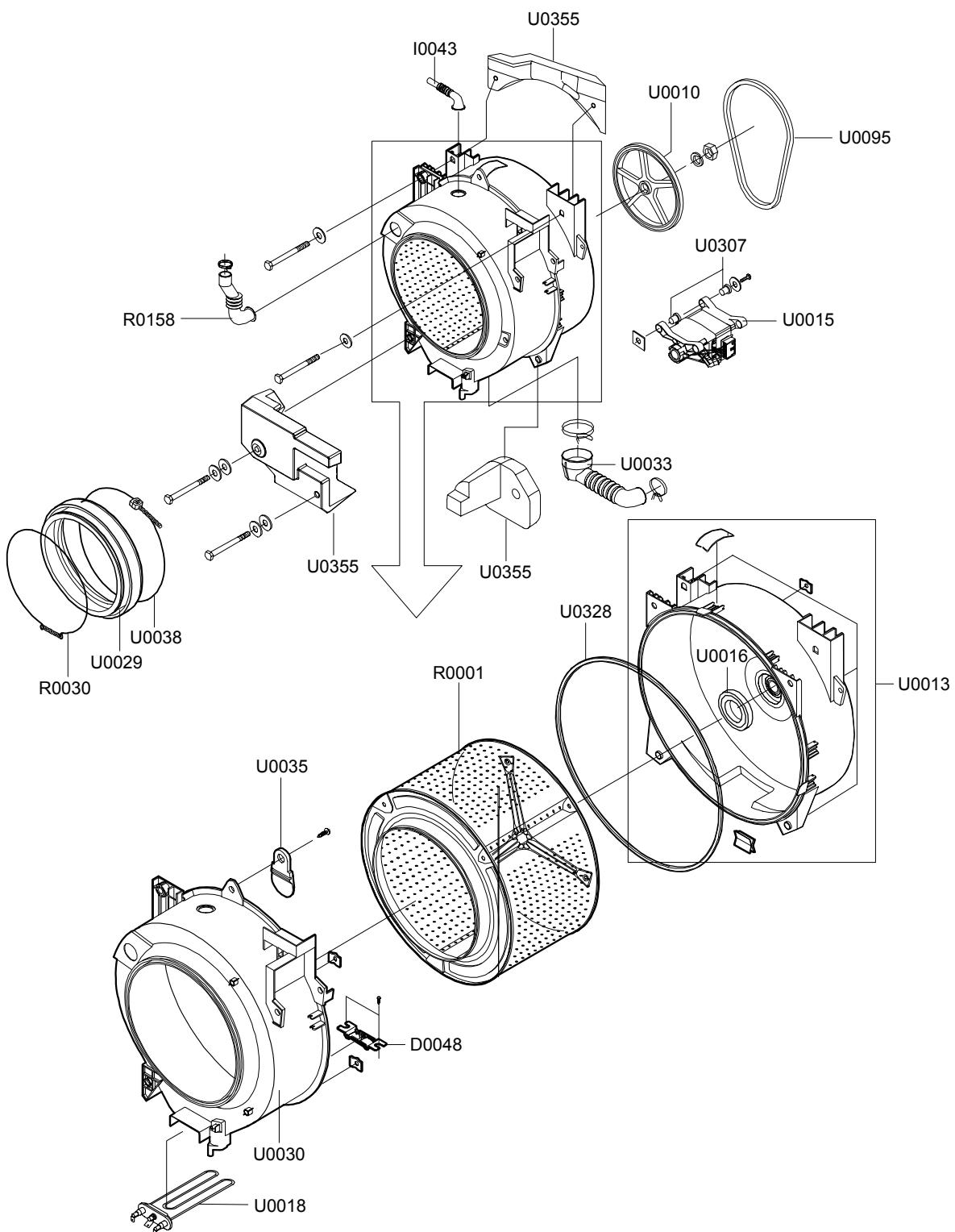


THE FEATURE OF PRODUCT

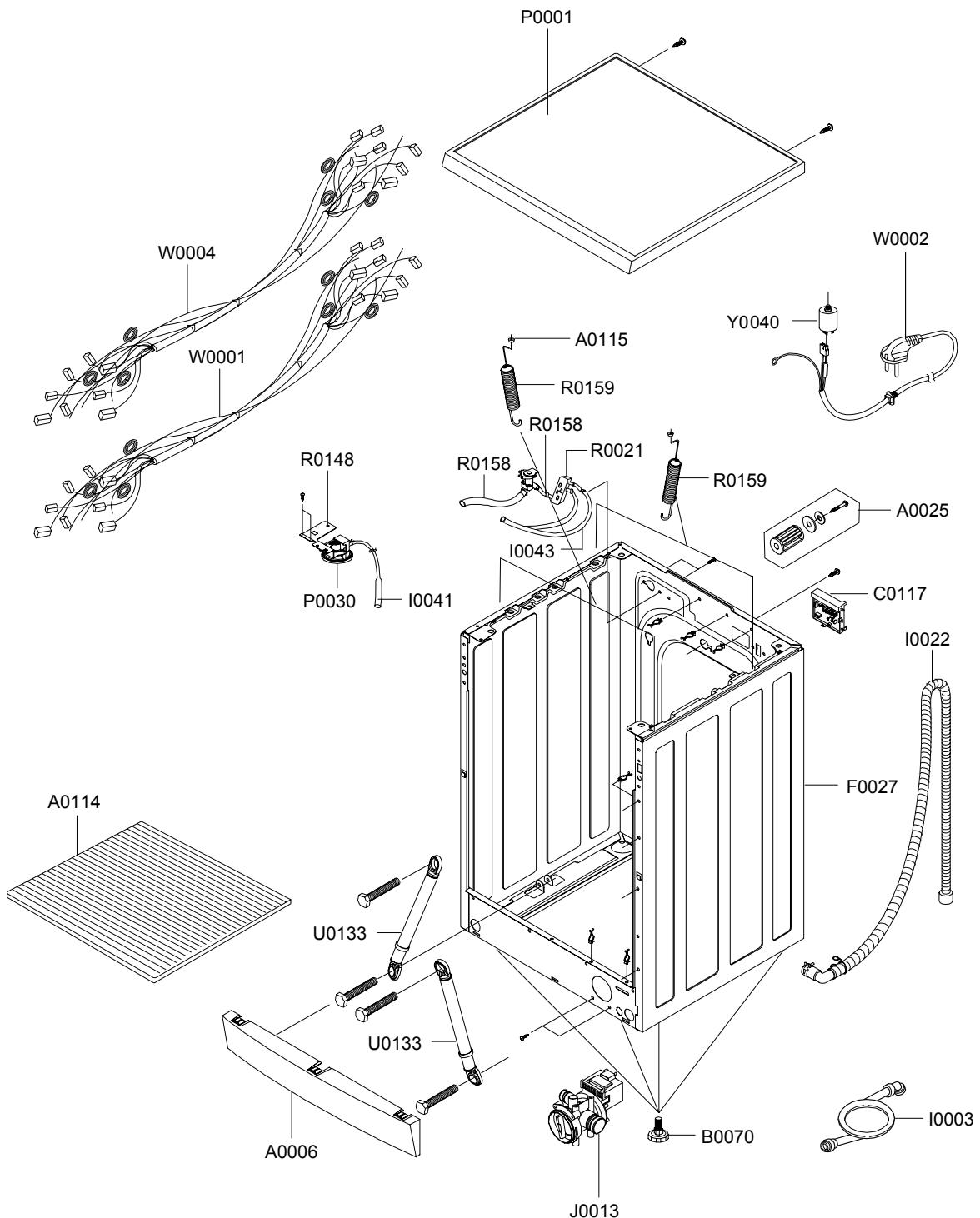
1. Silver Wash Ag+
2. Mixed Load
3. Calm Wash
4. Child Lock
5. Quick Wash



TOP(FRONT)



(TUB)



**(CASE)**

## 7-2. PARTS LIST

NO.	CODE NO.	DESCRIPTION	SPECIFICATION	QTY	SA/SNA	REMARK
A0004	DC63-00609A	COVER-FILTER	F125AV-B145AV,ABS	1	SA	
A0006	DC63-00608A	COVER-FRONT(L)	F125AV-B145AV,ABS	1	SA	
A0025	DC97-02106A	ASSY-FIXER TUB	S1005J,SLIM-PJT	5	SA	
A0034	DC60-40146A	BOLT-SPANER	OD36,T2.5,L52,FE,FZY,P	1	SA	
A0043	DC61-10688A	CAP-FIXER	SWF-P12,PP(TB53),WHT,	5	SA	
A0043	DC61-10688A	CAP-FIXER	SWF-P12,PP(TB53),WHT,	1	SA	
A0067	DC69-00646A	CUSHION-CORNER	Q1636GW/XEU,PS-FOAM	2	SA	
A0114	DC64-00434A	SHUTTER	F1215J/F-PJT,PP,WHT	1	SA	
A0115	DC61-60180A	SLEEVE-PLUG	NYLON#6,SEW-720DR,NTR	4	SA	
A0128	DC64-01018A	WINDOW-PANEL	T2-PJT,PC,W25,L54,TRP	1	SNA	
A0198	6902-000215	BAG SHEET	NITRON/HDPE,T0.5/T0.012,W1000,	2	SA	
A0198	6902-000304	BAG PE	LDPE,T0.05,L230,W180,TRP,8,2,PE M	1	SA	
A0198	DC69-30007G	BAG PE	HDPE-FILM,T0.015,L360,W230,NO	1	SA	
A0198	DC69-30007K	BAG PE	HDPE,T0.03,W700,L700,4	1	SA	
A0198	DC69-30007U	BAG PE	HDPE,T0.03,L450/C20,W330,NO_P	1	SA	
A0328	DC64-01011A	PANEL-DRAWER	WF-B125,ABS,WHT	1	SNA	
A0362	DC61-40081A	HOLDER-WIRE	DAWH-2NC, NYLON66,NTR	6	SA	
B0070	DC97-02079D	ASSY-LEG	SBP2,SD455,SD405,FLANG TYPE/25M	4	SA	
C0002	DC97-09899V	ASSY-PANEL CONTROL	WF-F125NC/YLW,CR PLAT	1	SA	
C0008	DC64-01012A	WINDOW-ENCODER	WF-B125A,PC,TRP(2	1	SNA	
C0043	DC64-01013C	BUTTON-PUSH(F)	WF-J145NC/YLP(T2-PJT,ABS,	1	SA	
C0044	DC64-01014A	BUTTON-PUSH(P)	WF-B125,ABS,SNOW-WHT,	1	SNA	
C0058	DC64-00653A	DOOR-LOCK S/W	DA,PA6-G,H82,W50,BLK,2	1	SA	
C0075	DC64-00942A	KNOB-ENCODER	T-PJT,ABS(HG-0760),	1	SA	
C0075	DC64-01015A	BUTTON-ENCODER	WF-B125,ABS,WTH,1200R	1	SA	
C0115	MFS-T2F12AB-00	ASSY PCB PARTS(M)	MFS-T2F12AB-	1	SA	
C0117	MES-AG2MOD-S0	ASSY PCB PARTS(S)	MES-AG2MOD-S	1	SA	
D0003	DC61-00932A	HINGE-DOOR	Q1636GW/XEU,ZNDC,TS	1	SA	
D0046	DC97-05111A	ASSY-LEVER DOOR	Q1636GW/XEU,TS-2 PJT	1	SA	
D0048	DC61-00933A	BRACKET-HINGE	Q1636GW/XEU,SBHG,T	1	SA	
D0061	DC64-00920A	DOOR-GLASS	R831,GLASS,NTR,CKD /C	1	SA	
D0072	DC61-00891A	GUIDE-HINGE	HAUZEN(DOM),POM,WHT,HI	2	SA	
D0075	DC64-00773D	HANDLE-DOOR	WF-F125AC,ABS,CR-COA	1	SA	
D0076	DC64-00564A	HANDLE-PIN	Q1636GW/XEU,STS,TS-	2	SA	
D0081	DC61-01144A	HOLDER-GLASS	SEW-3HR109BT,PP(TB53)	1	SA	
D0112	DC63-00506C	COVER-DOOR	WF-F125AC,ABS,CR-CO	1	SA	
F0027	DC99-00620A	ASSY-PAINT FRAME	WF-F125AV,AG+/T1.0/NEAT	1	SA	
F0064	DC97-09198C	ASSY-FRAME FRONT	T-PJT,NEAT-WHT	1	SA	
F0065	DC97-05134C	ASSY-FRAME PLATE(U)	WF-B125AV/YLP,T-PJT/	1	SA	
F0125	DC61-01397A	FRAME-PLATE(U)	T-PJT,EGI,NTR,T0.8,	1	SNA	
I0003	DC62-10289C	HOSE-WATER(C)	RUSSIA,PVC+NYLON,ID10.3,	1	SA	
I0022	DC97-00139E	ASSY-HOSE DRAIN(O)	SB-PJT,PP/L1770/CHINA	1	SA	
I0030	DC62-10278A	HOSE-HANGER	PP(JS20),NTR	1	SA	
I0041	DC67-00107A	HOSE-PRESSURE	S821,PE-BLOW,ID13.2,OD6.2,	1	SNA	

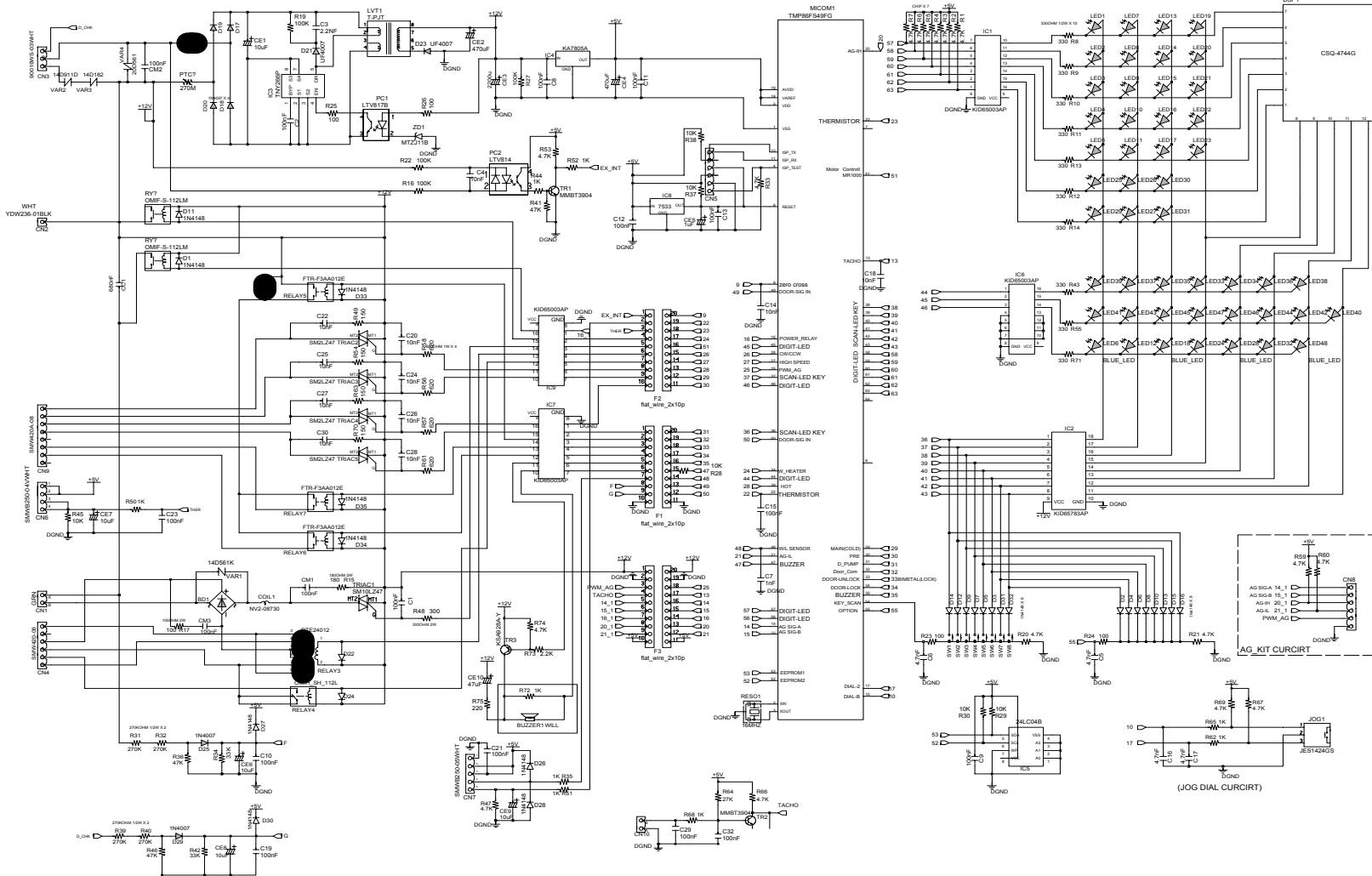
NO.	CODE NO.	DESCRIPTION	SPECIFICATION	QTY	SA/SNA	REMARK
I0043	DC62-10303A	HOSE-AIR	EPDM, ID24,L130,BLK,SWF-P1	1	SA	
I0043	DC62-10272D	HOSE-AIR	S621,PVC, ID4.5,L520,NTR	1	SNA	
I0043	DC62-10272B	HOSE-AIR	F1035SA/F1235SA,PVC, ID4.5,L	1	SNA	
J0013	DC96-00859A	ASSY-PUMP DRAIN	R1245A/XSC,220V~240V/50H	1	SA	
J0019	DC61-10652C	CASE-PUMP	PP(5113MF6),SWT50B1P,GRY	1	SA	
J0024	DC62-00187A	SEAL-WASHER	SW80ASPIW/YMI,NBR,BLK,	1	SA	
J0025	DC31-00056A	PUMP-DRAIN	220~240V,50Hz,30W/3000RPM	1	SA	
P0001	DC97-09919A	ASSY-COVER TOP	T2-PJT/WF-F125NC,WOOD/NEA	1	SA	
P0030	DC32-30006P	SENSOR PRESSURE	DN-S14(P1291),TERMINAL-T	1	SNA	
P0082	DC97-05973A	ASSY-HOSE PRESSURE	5.2kg/SD455/SD405,PVC	1	SA	
R0001	DC97-01463J	ASSY-DRUM	F-PJT/SD-PJT/LIFTER,STS430/FIX	1	SA	
R0019	DC97-09221D	ASSY-HOUSING DRAWER	WF-F125AC/YLP,AG+/2W	1	SA	
R0019	DC97-02132F	ASSY-HOUSING DRAWER	WF-R125AC,TROIKA-PJT	1	SA	
R0021	DC97-06842A	ASSY-GUIDE WATER	F1235SA,AG+ASSY	1	SA	
R0025	DC97-09695A	ASSY-PANEL DRAWER	WF-J145NC/YLP/T2-PJT,7	1	SA	
R0027	DC97-00731A	ASSY-SENSOR PRESSURE	P1091,S-PRE+BRAKET+	1	SA	
R0030	DC91-12078A	ASSY-WIRE DIAPHRAGM	SWF-P12,FRAME-FRONT	1	SA	
R0036	DC61-01395A	BODY-DRAWER	WF-R125,PP,NTR,5.2KG	1	SA	
R0047	DC67-00114A	CAP-FILTER	SW80ASPIW/YMI,P,P,BLK	1	SA	
R0096	DC63-00143A	HOUSING-DRAWER(L)	PP(TB-53),SL-600,WHT	1	SA	
R0124	DC61-01417A	STOPPER-DRAWER	TROIKA PJT 5.2kg,PP,T2.5,	1	SNA	
R0147	6011-001421	BOLT-FLANGE	M7,L61(29.4),ZPC(YEL),SWRCH1	5	SA	
R0148	DC61-40345A	BRACKET-PRESSURE	GI or GA,SWK-P12,T1.0	1	SNA	
R0154	DC63-10060B	SPONGE-HARNESS	CHINA,PU-FOAM,T10,W80,L50	1	SA	
R0154	DC63-10002M	SPONGE-HARNESS	T5,W60,L100,PU-FOAM,	1	SA	
R0158	DC62-10305A	HOSE-DRAWER TUB	EPDM, ID35,L158,BLK	1	SA	
R0158	DC67-00051D	HOSE-DRAWER	S1093~S6093,EPDM,BLK	0.42	SA	
R0158	DC67-00051G	HOSE-DRAWER	F1045A,EPDM, ID10,OD16,BL	1	SA	
R0159	DC61-01279A	SPRING-HANGER	5.2KG(F631/F831),HSWR,CD2.	2	SA	
R0159	DC61-01280A	SPRING-HANGER	5.2KG(F631/F831),HSWR,CD2.	2	SA	
R0160	DC61-70184A	SPRING-CLIP	XQB46-71,HSWR,	2	SA	
U0003	DC60-60044A	WASHER-PLAIN	ID10.5,OD30,T3,STS304	2	SA	
U0003	DC60-60044B	WASHER-PLAIN	SBC, ID8.4,OD30,T3	5	SA	
U0005	DC60-60040A	WASHER-NYLON	ID10.5,OD32,T2,PBSP-1/2	5	SA	
U0010	DC66-10176B	PULLEY	ALDC,D297,P1291, ID12.5	1	SA	
U0012	DC61-00856A	BRACKET-HEATER	SB-PJT,STS430	1	SNA	
U0013	DC97-00214K	ASSY-TUB BACK	SWF-P8/P6091,LOW-RPM/NO.3	1	SA	
U0015	DC31-00002H	MOTOR-DRUM	HXGP2I,S803J,50HZ,LOW-R	1	SA	
U0016	DC62-00007A	SEAL-OIL	NBR(SD25),BLK,P6091/NBU	1	SA	
U0018	DC47-00006B	HEATER	KAWAI,P-SLIM MODEL,SUS316L,23	1	SA	
U0023	DC61-00201A	BRACKET-NUT	SBHG-R,P1291,T3,NO-PAI	1	SA	
U0023	DC61-00201A	BRACKET-NUT	SBHG-R,P1291,T3,NO-PAI	1	SA	
U0023	DC61-40348B	BRACKET-NUT	SBHG-R,P1291,T3,NO-PAI	2	SA	
U0023	DC61-40348B	BRACKET-NUT	SBHG-R,P1291,T3,NO-PAI	2	SA	
U0026	DC97-02138E	ASSY-TUB FRONT	SD455/5.2KG(FRONT),DIAPH	1	SA	

NO.	CODE NO.	DESCRIPTION	SPECIFICATION	QTY	SA/SNA	REMARK
U0029	DC61-20219E	DOOR-DIAPHRAGM	SEW-HW107,EPDM,GR	1	SA	
U0030	DC61-00365B	TUB-FRONT	SL-600,FRPP(GR15%)SAMBAK	1	SNA	
U0033	DC62-00121A	HOSE-FILTER TUB	S1005J,EPDM,ID65	1	SA	
U0035	DC62-20311A	VANE-CHECK	SWF-P12,EPDM,BLK,	1	SNA	
U0038	DC91-12077A	ASSY-CLAMP DIAPHGRAM	SWF-P12,TUB	1	SA	
U0082	DC62-00116A	FILTER-NET	P1205J,EPDM+STS304,OD25,ID9	1	SA	
U0095	6602-001072	BELT-TIMING GEAR	POLYURETHAN,L1270,J5,ME	1	SA	
U0133	DC66-00334A	DAMPER-SHOCK	Q1636GW/XEU,L197.5,	2	SA	
U0307	DC61-00041A	CUSHION-MOTOR	SWF-6V,BUTYL,ID16/OD	1	SA	
U0320	6011-001448	BOLT-HEX	M8,L170(25),ZPC(YEL),SWRCH18A,W	1	SA	
U0320	DC60-40141A	BOLT-HEX	SM10C/DAMPER,HEX,M8,L66,ZPC2(	2	SA	
U0320	6011-001452	BOLT-HEX	M10,L20,ZPC(YEL),SWCH10AK,ASSY(	1	SA	
U0320	6011-001447	BOLT-HEX	M8,L123(25),ZPC(YEL),SWRCH18A,W	1	SA	
U0320	DC60-40144A	BOLT-HEX	M10,L41,ZPC2(YEL),SM10C/DAMPER	2	SA	
U0328	DC62-40183A	PACKING-TUB	SWF-P12,EPDM,BLK	1	SA	
U0353	DC61-60359E	CLAMPER HOSE	F1235AS/F1035AS,ID7.8,Y	1	SA	
U0353	DC61-60359E	CLAMPER HOSE	F1235AS/F1035AS,ID7.8,Y	1	SA	
U0353	DC61-60497A	CLAMPER HOSE	SWF-P12,HSWR,ID70/OD75.8,	1	SA	
U0353	DC61-00118A	CLAMPER HOSE	P1291,LYLON6/6,ID27,OD30,	1	SA	
U0353	DC61-00133A	CLAMPER HOSE	P1291,PP(BJ-730),ID24.5,OD2	1	SA	
U0354	DC97-06393J	ASSY-SEMI TUB DRUM	WF-F125AC/YLP,SSEC	1	SA	
U0355	DC67-00038A	WEIGHT-BALANCER	F-PJT(40CM),CONCREET	1	SA	
U0355	DC67-00042C	WEIGHT-BALANCER	F,R MODEL ETC.,Concrete,	1	SA	
U0359	DC62-00066A	FILTER-CASE	PP,BLK/SW90V2	1	SA	
U0360	DC61-60499B	CLIP-TUB	HSWR,P1291,NO/PAINT,	6	SA	
U0360	DC61-60520A	CLIP-TUB	SK5,SWF-P12,PLATE-TYPE,	2	SA	
V0016	DC68-20361A	LABEL-PRICE	DOM_ALL,MOJOGI,W70,L20	1	SA	
W0001	DC96-00990A	ASSY-WIRE HARNESS	TROIKA-PJT,SUB/WIRE (R	1	SA	
W0002	DC96-00146A	asSY POWER CORD	UCP2,250V/16A,	1	SA	
W0004	DC96-00947A	ASSY-M.WIRE HARNESS	WF-F85A,TROIKA-PJT/A	1	SA	
W0032	DC62-00024F	VALVE-WATER	B1215J,NYLON66/250TRMN,N	1	SA	
Y0040	DC29-00006A	FILTER-EMI	DFC-2712R,P/PV/SLIM,250V,12A,	1	SA	
Z0006	DC97-02412A	ASSY-BOLT	SWF-P12,MOTOR, M8*L62	1	SA	
Z0006	DC97-02412H	ASSY-BOLT	Q1657	1	SA	
Z0006	DC97-06159B	ASSY-BOLT	SCD-PJT	1	SA	
	DC63-00651A	COVER-HEATER	Q1657TGW/XEU,GI,T0.4,	1	SA	
	DC68-20436A	LABEL-PACKING	ART-PAPER,W110,L230,STANDA	1	SA	
	DC72-00038A	SPONGE-FRAME	TROIKA-PJT,PU-FOAM,T13,W1	1	SA	

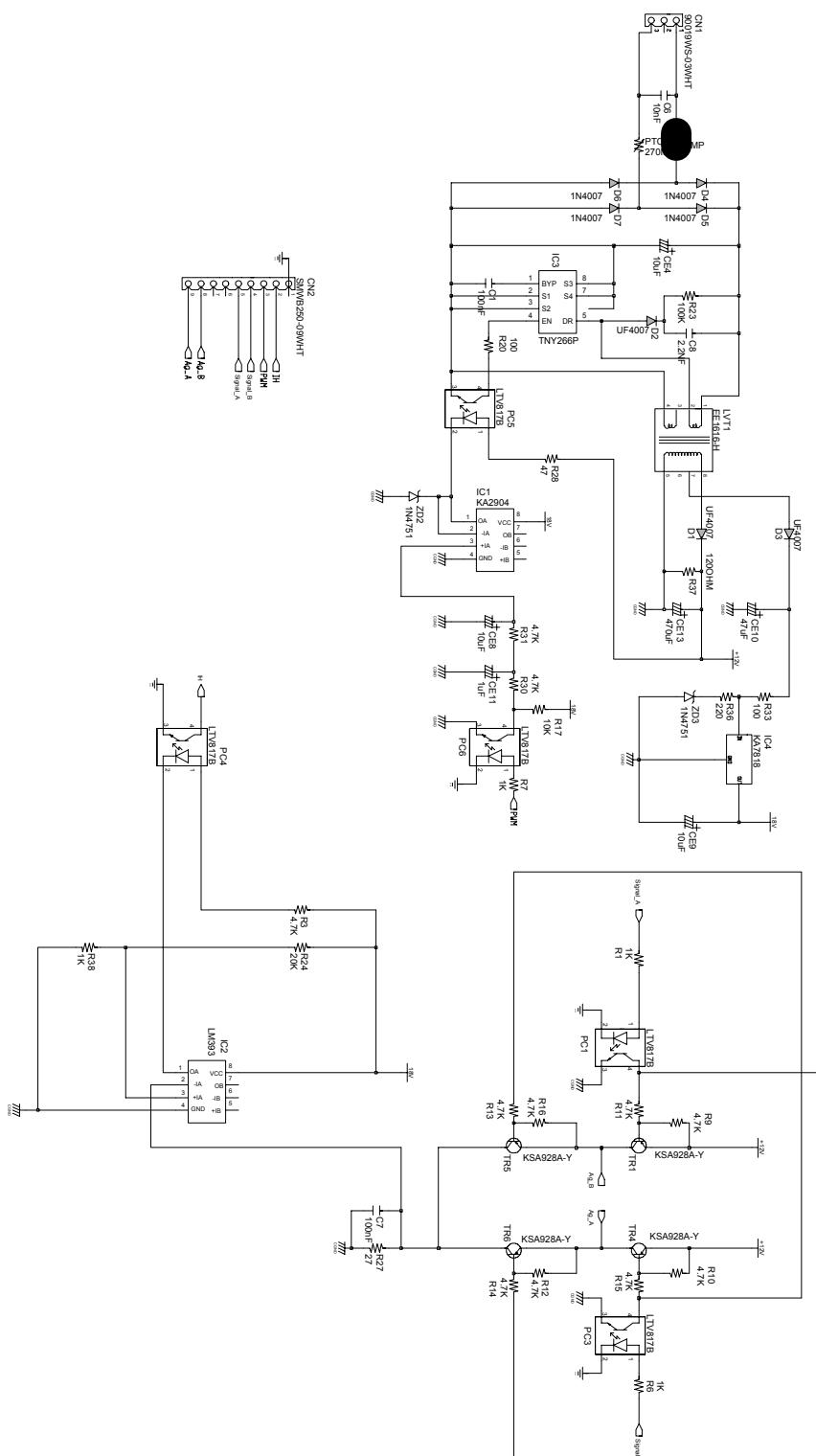
## 10. PCB CIRCUIT DIAGRAM

## **10-1. PCB CIRCUIT DIAGRAM**

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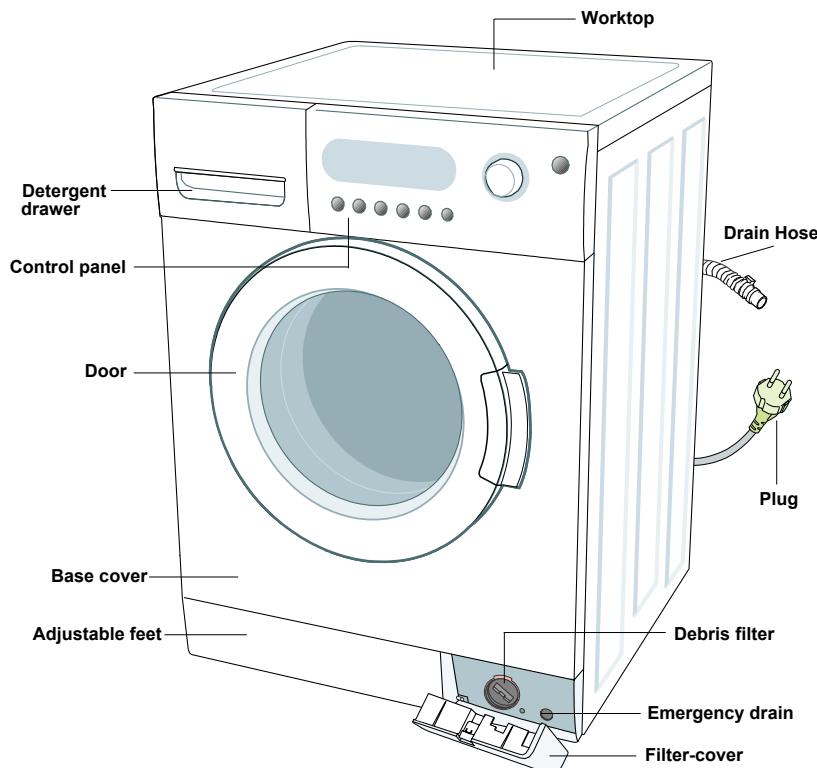
## **10-2. PCB CIRCUIT DIAGRAM (AG-KIT)**



## 2. THE FEATURE OF PRODUCT

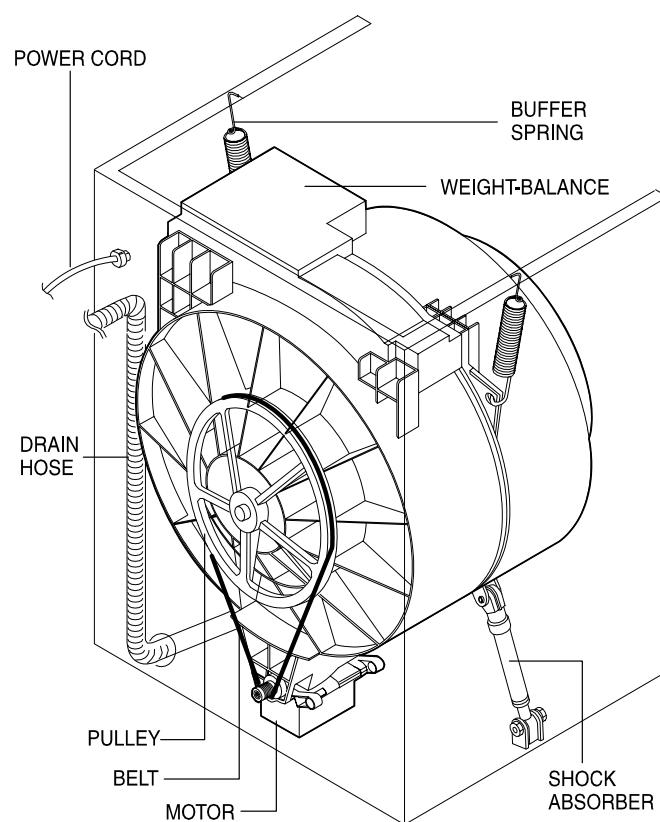
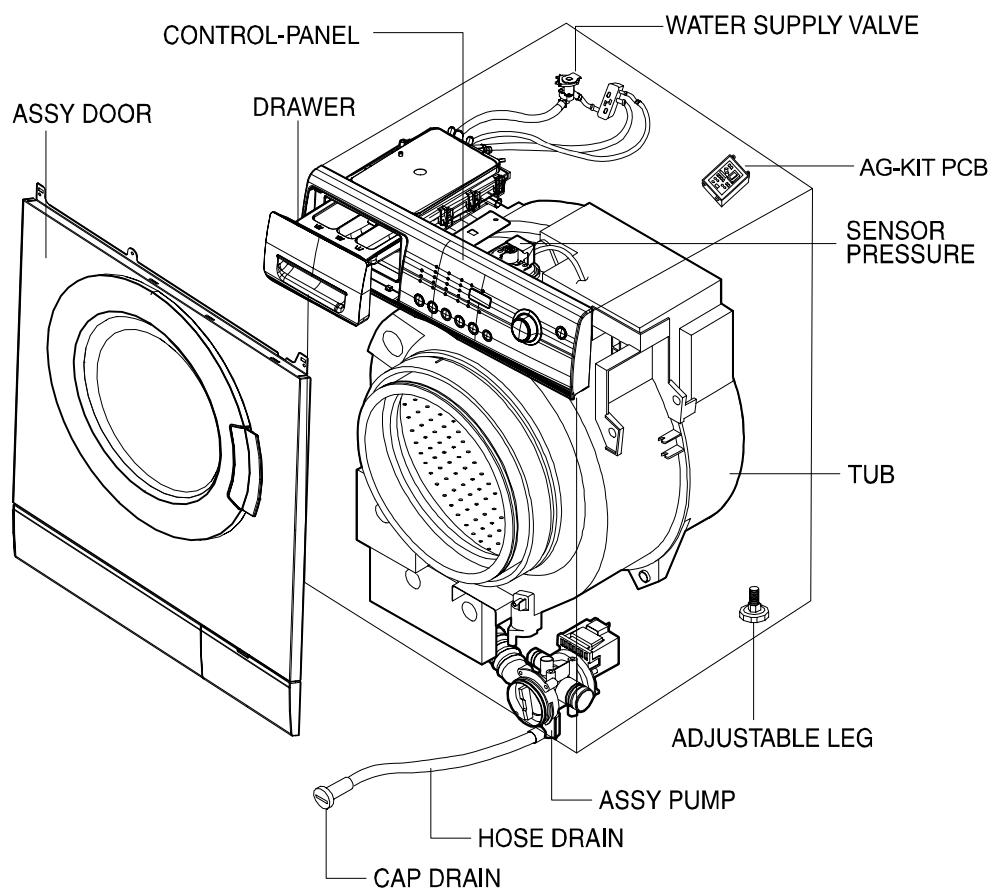
### 2-1. SPECIFICATIONS

<b>WASH TYPE</b>	FRONT LOADING TYPE		
<b>DIMENSION</b>	NET	W 598mm X D 404mm X H 844mm	
	GROSS	W 668mm X D 530mm X H 890mm	
<b>WATER PRESSURE</b>	50 kPa ~ 800 kPa		
<b>WEIGHT</b>	NET	65 kg	
	GROSS	68 kg	
<b>WASH and SPIN CAPACITY</b>	4.5 kg (DRY LAUNDRY)		
<b>POWER CONSUMPTION</b>	WASHING	220 V	180 W
		240 V	180 W
	WASHING and HEATING	220 V	2000 W
		240 V	2400 W
	SPIN	MODEL	WF-F125NC
		220~240V	500W
	PUMPING		
	34 W		
<b>WATER CONSUMPTION</b>	43 ℥ (STANDARD COURSE)		
<b>SPIN REVOLUTION</b>	MODEL	WF-F125NC	WF-F105NV
	rpm	1200	1000
<b>PACKAGE Wt</b>	PAPER	2.5kg	
	PLASTIC	1.0kg	



## 2-2. OVERVIEW OF THE WASHING MACHINE

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## 2-3. THE COMPARATIVE SPECIFICATIONS OF PRODUCT

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Item	4.5kg	Old (6.0kg)
Model Name	WF-F125NC	WF-F125AC
Capacity (Washing)	4.5kg	4.5kg
Drum Capacity	43ℓ	43ℓ
Washing Motor	HXGM4I	HXGM4I
Heater (220V)	2000W	2000W
Supply/Drain	All temperatures /Drain pump	All temperatures /Drain pump
Balancer	Weight	Weight
SIZE(W*D*H)	598*404*844	598*404*844

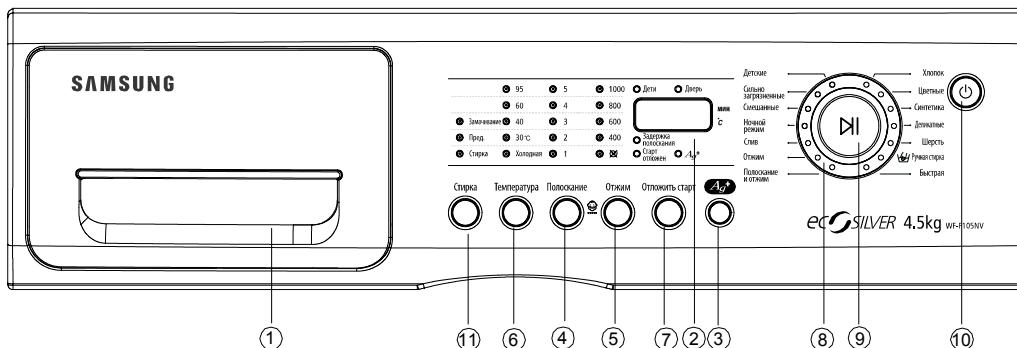
## **2-3. THE COMPARATIVE SPECIFICATIONS OF PRODUCT**

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<b>4.5kg</b>			
<b>Model Name</b>		WF-F125NC	WF-F105NV
			<b>Function</b>
Water-level Control		O	O
Add Laundry		X	X
Exterior Replacement Part Name		<b>Specifications</b>	
Design	Cover Door	Chrome-Plating	Imperial-Silver
	Handle Door	Chrome-Plating	Imperial-Silver

## 3. PRODUCT SPECIFICATIONS

### 3-1. OVERVIEW OF THE CONTROL PANEL



#### 1. Detergent dispenser

#### 2. Disp lay panel

Displays the remaining wash cycle time and error messages.

#### 3. Silver Nano selection button

Silver Nano water is supplied in washing as well as the last rinse, featuring sterilization and antibacterial coating.

#### 4. Rinse selection button

Press the rinse button to add rinse cycles. Maximum number of rinse cycles is five.

#### 5. Spin selection button

Press the button repeatedly to cycle through the available spin speed options.

WF-F125NC	<input type="checkbox"/> , <input checked="" type="checkbox"/> , 400, 800, 1000, 1200 rpm	<input checked="" type="checkbox"/> : no spin, <input type="checkbox"/> : rinse hold
WF-F105NV	<input type="checkbox"/> , <input checked="" type="checkbox"/> , 400, 600, 800, 1000 rpm	

No spin

The laundry remains in the drum without being spun after the final drain  
Rinse Hold

The laundry remains soaking in the final rinse water.

Before the laundry can be unloaded, either "Drain" or the "Spin" program must be run.

#### 6. Temperature selection button

Press the button repeatedly to cycle through the available water temperature options (cold water(), 30°C, 40°C, 60°C and 95°C).

#### 7. Delay Start selection button

Press the button repeatedly to cycle through the available delayed start options (from 3 hour to 24 hours in one hour increments).

Displayed hours means the time of finished washing-cycle.

#### 8. Fuzzy Control dial

Turn the dial to select one of the 14 available wash programs.

Cotton, Coloureds, Synthetics, Delicates, Wool, Hand wash, Quick, Rinse+Spin, Spin, Drain, Baby Program(Stains, Delicates, Coloreds, Cotton)

#### 9. Start/Pause selection button

Press to pause and restart programs.

#### 10. Ⓛ (On/Off) selection button

Press once to turn the washing machine on, press again to turn the washing machine off. If the washing machine power is left on for longer than 10 minutes without any buttons being touched, the power automatically turns off.

#### 11. Wash selection button

Press the button to select wash. Wash is available only with Baby Cotton, HeavySoil, Mixed Load, Calm Wash, Cotton, Coloureds, Synthetics, Delicates.

## 3-2. PROGRAMME CHART

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( \* user option)

PRO-GRAM	Max load(kg)				DETERGENT AND ADDITIVES			Tem(°C)	Spin Speed(MAX)rpm				Delay start
	WF-J145NC J125NC R105NV R1254 R1054 R854	WF-R125NC R105NV R1254 R1054 R854	WF-F125NC F105NV F1254 F1054 F1054S F854 F854S	WF-S1054 S854 S854S	Prewash	wash	Sof-tener		WF-J145NC J125NC R1254C R1054 F125NC F1254	WF-J125NC J1254C R125NC R1254 F105NV F1054S S1054	WF-J105NV J1054 R105NV R1054 F105NV F1054S S1054	WF-R854 F854 F854S S854 S854S	
Cotton	7.0	5.2	4.5	3.5	*	yes	*	95	1400	1200	1000	800	*
Coloureds	7.0	5.2	4.5	3.5	*	yes	*	60	1400	1200	1000	800	*
Synthetics	3.0	3.0	3.0	2.0	*	yes	*	60	800	800	800	800	*
Delicates	2.5	2.5	2.0	1.5	*	yes	*	40	800	800	600	600	*
Wool	2.0	1.5	1.5	1.5	-	yes	*	40	400	400	400	400	*
Handwash	2.0	1.5	1.5	1.5	-	yes	*	40	400	400	400	400	*
Quick	2.0	1.5	1.5	1.5	-	yes	*	60	1400	1200	1000	800	*

PROGRAM	Type of WASH
Cotton	Averagegely or lightly soiled cottons, bed linen, table linen, underwear, towels, shirts, etc.
Coloureds	Averagegely or lightly soiled cottons, bed linen, table linen, underwear, towels, shirts, etc.
Synthetics	Averagegely or lightly soiled blouses, shirts, etc., Made of polyester (dienlen, trevira), polyamide (perlon, nylon) or other similar blends.
Delicates	Delicate curtains, dresses, skirts, shirts and blouses.
Wool	Only machine washable woolens with pure new wool label.
Handwash	Very light wash course like hand wash.
Quick	Lightly soiled cottons or linen blouses, shirts, dark coloured terry cloth, coloured linen articles, jeans, etc.

1. Programme with prewash lasts approx. 15 minutes longer.
2. The programme duration data has been measured under the conditions specified in Standard IEC 456.
3. Consumption in individual homes may differ from the values given in the table due to variations in the pressure and temperature of the water supply, the load and the type of laundry.

( \* user option)

PRO-GRAM	Max load(kg)				DETERGENT AND ADDITIVES			Tem	Spin Speed(MAX)rpm				Delay start
	WF-J145NC J125NC J105NV J1454C J1254C J1054	WF-R125NC/ R105NV R1254 R1054 R854	WF-F125NC/ F105NV F1254 F1054 F1054S F854 F854S	WF-S1054/ S854/ S854S	Pre-wash	wash	Sof-tener		WF-J145NC/ J105NV J125NC R125NC R1254 F125NC F1254	WF-J105NV J1054 R125NC R1254 F105NV F1054S S1054	WF-F854/ F854S F854S	WF-R854/ F854 F854S S854S	
Baby Cotton	7.0	5.2	4.5	3.5	*	yes	*	95	1400	1200	1000	800	*
Heavy Soil	7.0	5.2	4.5	3.5	*	yes	*	60	1400	1200	1000	800	*
Mixed Load	2.5	2.0	2.0	1.5	*	yes	*	60	800	800	600	400	*
Calm Wash	6.0	5.2	4.5	3.5	*	yes	*	40	1400	1200	1000	800	*

PROGRAM	Type of WASH
Baby Cotton	Averageley or lightly soiled baby cottons, bed linen, table linen, underwear, towels, shirts, etc.
Heavy Soil	Stained or heavy soiled cottons, bed linen, table linen, underwear, towels, shirts, jeans, etc.
Mixed Load	A mix of lightly soiled cottons and synthetic fabrics.
Calm Wash	Extremely low noise level during the entire cycle and finish rinse hold. Cottons, bed linen, table linen, underwear, towels, shirts.

### **3-3. MAIN FUNCTION**

---

#### **1) Auto power S/W off function**

- After power on, the auto power S/W off function automatically switches power off for you if you do not press selection button for 10 minutes
- After selecting the function, the auto power S/W off function automatically switches power off for you if you do not press start/pause button for 10 minutes
- until 5 minutes past, After finishing the last function, the auto power S/W off function automatically switches power off for you if you do not re-select the course button or manual button

#### **2) Door open function**

- Door just can be opened at water level 24.80 KHz over, water temperature 55°C below, motor off, if power is off door is not opened (only auto-door model)
- If door is open during the operating, all operating is halted, and door error message will be displayed (2-digit panel displays "dE" 4-digit panel displays "door") and error melody will come out
- Door open error can be cleared by closing the door. the operating keeps going on

#### **3) Rinse hold function**

- If rinse hold function selected, the operating is finished , the machine do not drain the water after last rinse

#### **4) No spin function**

- If no spin function selected, the operating is finished after last rinse

#### **5) Drain function**

- Drain function is over, after pumping out the water for 2 minutes , without motor rotating

#### **6) Pre-washing function**

- Pre-washing function can be selected ,when you choice the following mode; cotton, coloreds, synthetics, delicates, baby cotton, baby coloreds, baby delicates, baby stains
- Water level/reverse time is the same with the selected course
- Pre-washing takes about 16 minutes

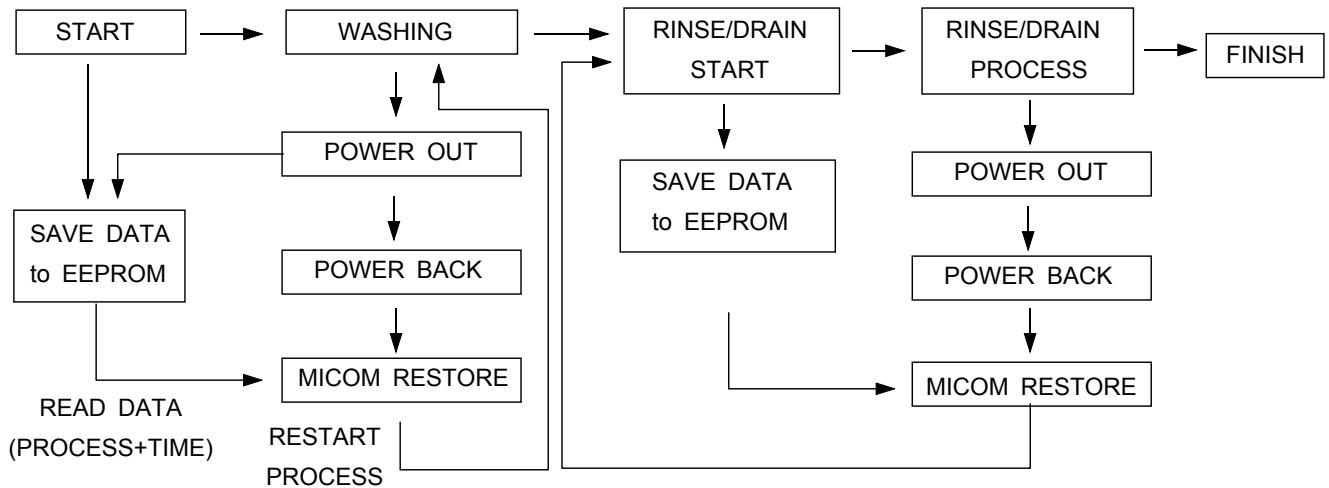
#### **7) Rinse+ function**

- This function practises rinse process once more

## 8) Power-out compensation function

- If power is out on selected process, the process before power out is stored to EEPROM, once power is back the process before power out continues.
- When power is back, washing process starts from the point of the power out, rinse/drain process starts from the initial process.

**POWER-OUT COMPENSATION FUNCTION PROCESS**



## 9) Water heater Error function

- ① This function starts working, when the heater works abnormally.  
(this function begins sensing the heater 2 minutes later, after the heater operating)
- ② The value of the initial thermistor(A1) is compared with that of the thermistor(A2) in 2 minutes  
( $Y=A2-A1$ )
  - For 10 minute late, the variance of temperature(Y) is less than  $2^{\circ}\text{C}$ , "HE2" message is displayed on the panel.
- ③ The value of the initial thermistor(A1) is compared with that of the thermistor(A2) in 11 minutes  
( $Y=A2-A1$ )
  - For 1 minute the variance of temperature(Y) increases more than  $40^{\circ}\text{C}$ , "HE1" message is displayed on the panel.
- ④ At this time heater, Error "HE2 (heater do not work), HE(overheated)" is displayed and all working process off
- ⑤ The heater operating continues during heating hours, if washing hour is left over, the residual washing process keeps going without heating.

## 10) Fuzzy washing function (weight-sensing)

After finishing initial water supply, when the fall of the water level needs supplementary water supply, Sensing function perceives the weight with the supplementary water supply numbers and starts to work. Under the course of Cotton, or Coloureds, if the supplementary water supply numbers become over 2 times the function is going at default condition ( high water level ), if 1 time that is going at middle level, if 0 below low water level, heating hours and rinse hours depend on the above data.

**ECO PRE mode is selected, the process going on at default condition.**

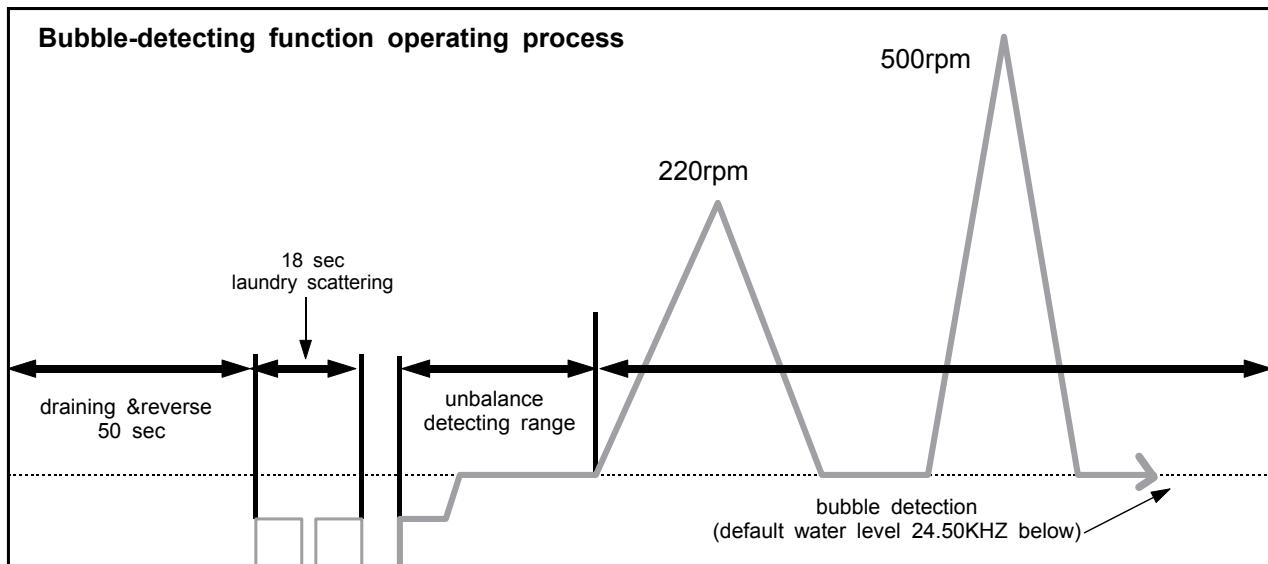
	Washing hours		Rinse water level
	Cotton	Coloureds	
High	Default	Default	Default
Middle	Default-20 min	Default-10min	23.80KHZ
Low	Default-30 min	Default-15min	24.10KHZ

\*After sensing weight, above hours is decreased from above default hours

## 11) Bubble - detecting function

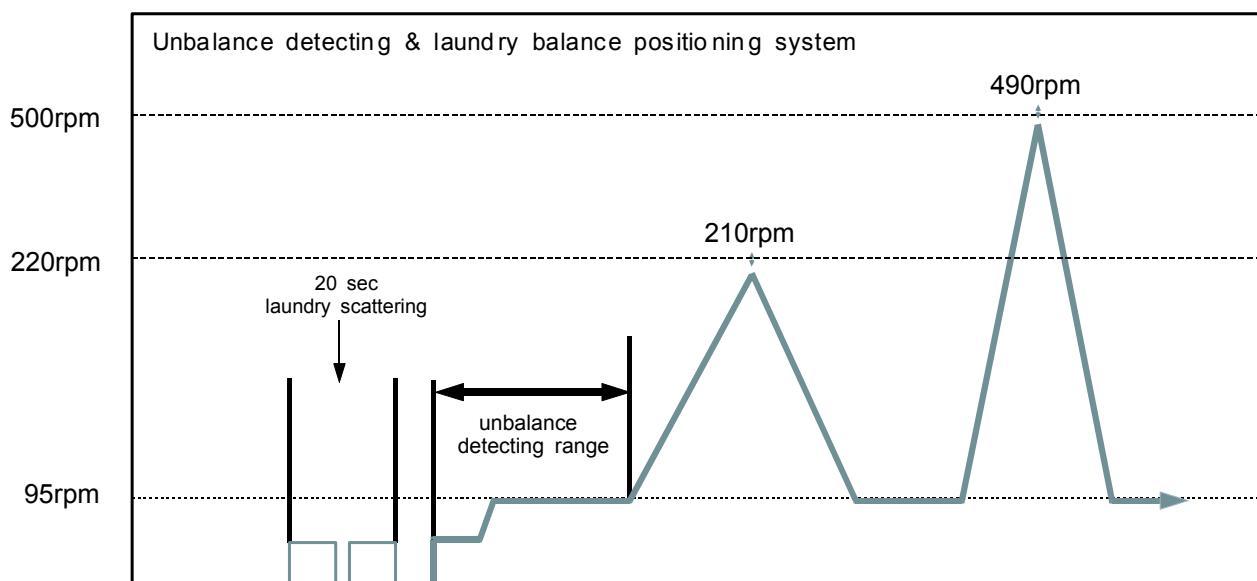
At the each condition of washing&dehydrating , rinse&dehydrating , hydrating, bubble -detecting function works, this function works 5times normally, if the function detects bubbles at 6 times , the bubble-detecting function stops and go on to the next process.

- The bubble-detecting function during washing & dehydrating to rinse & dehydrating  
after 2 times instant dehydrating and before main dehydrating, if the water level is under 24.50KHZ, Bubble → Detecting function thinks there are bubbles and add the bubbles-removing rinse, needing hours are above hours and 8 Min 40 sec.  
→ The bubble-detecting function during single hydrating process  
after 2 times instant dehydrating and before main dehydrating , if the water level is 24.50KHZ below or during main dehydrating, water level data is 24.50KHZ below Bubble-detecting function thinks there are bubbles and add the bubbles-removing rinse 1 times, needing hours are above hours and 5 min 50 sec.



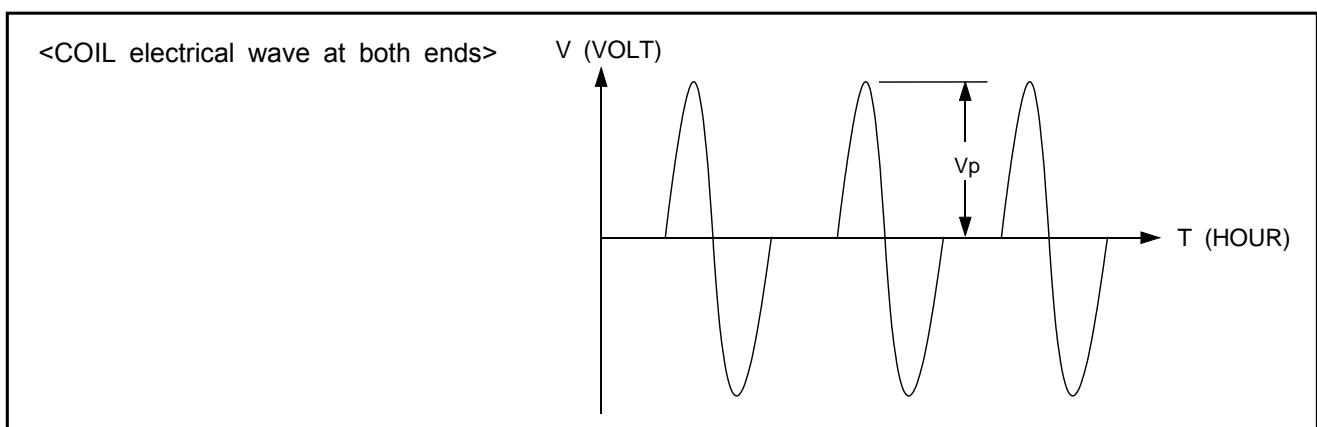
## 12) Unbalance detecting & laundry balance positioning system

- ① Just before the hydrating process and just after reversal rotation for balancing laundry position, this function is carried out
- ② The initial 6 sec is the period of reversal rotation for balancing laundry position , Drum rotates 50rpm for initial 6 sec
- ③ Next 12 sec, the rotation increases the speed from 50 rpm to 95 rpm slowly
- ④ During the next 8 sec, drum rotates at the speed of 95 rpm, the sensor decides the degree of laundry unbalance with TACHO data which is attached to motor
- ⑤ If the degree of unbalanced laundry is over 6 times to default value, laundry balancing system carries out feed back process 3 times



## 13) R.P.M control

The rotating motor enables the magnetics( i.e generator) to generate magnetic flux in proportion to r.p.m, magnetic flux induced by coil sensor in the opposite side produces the wave like the figure below to  $d\Phi/dt$  and via rectangular wave generating circuit, the waves reaches MICOM and micom controls r.p.m with the pulse, count and cycle inputted by program.



### 3-4. TECHNICAL POINT

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#### 1) Motor on/off time at each course

unit:sec

Course	Washing				Motor r.p.m
	Cw	Off	Ccw	Off	
Cotton	13	4	13	4	52
Coloureds	12	8	12	8	50
Synthetics	7	8	7	8	40
Delicates	5	10	5	10	40
Wool	2	48	2	48	50
Handwash	2	58	2	58	50
Quick	12	8	12	8	50
Pre	10	10	10	10	50
B-Cotton	8	12	8	12	45
B-Coloureds	10	10	10	10	45
B-Delicates	5	10	5	10	40
B-Stain	10	10	10	10	45

#### 2) Final dehydrating r.p.m at each course

unit:rpm

Course \ Model	WF-F125NC	WF-F105NV
Baby Cotton	1200	1000
Cotton	1200	1000
Coloureds	1200	1000
Synthetics	800	800
Delicates	800	600
Wools	400	400
Quick	1200	1000
Handwash	400	400
B-Cotton	1200	1000
B-Coloureds	1200	1000
B-Delicates	800	600
B-Stains	1200	1000

※ You can change the r.p.m to the above a table by use spin button under no spin situation.

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### 3) The water supply control at each process cycle

Process cycle \ Model	WF-F125NC, WF-F105NV
Pre Washing	Cold water 5L/min
Washing	Cold water 10L/min + (Hot water 10L/min)
Rinse	Cold water 10L/min
Final rinse	Cold water 10L/min + Cold water 5L/min

### 4) The water level data at each course

unit:Khz

Course \ Water level	Default water level (kHz)	Supplementary water START (kHz)	Supplementary water End (kHz)
Cotton	Washing	24.25	24.90
	Rinse	23.60	25.00
Coloureds	Washing	24.25	24.90
	Rinse	23.60	25.00
Synthetics	Washing	24.40	25.00
	Rinse	23.60	25.00
Delicates	Washing	23.80	24.55
	Rinse	23.65	24.55
Wools / Handwash	Washing	23.45	24.35
	Rinse	23.15	24.35
Quick	Washing	24.40	25.00
	Rinse	23.80	25.00
B-Cotton	Washing	24.25	24.90
	Rinse	23.50	25.00
B-Coloureds	Washing	24.25	24.90
	Rinse	23.50	25.00
B-Delicates	Washing	24.25	24.90
	Rinse	23.50	25.00
B-Stains	Washing	24.25	24.90
	Rinse	23.50	25.00

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## 5) The other water level data

unit:Khz

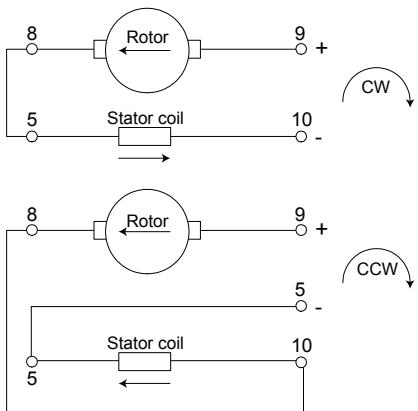
The water data unter each conditon		WF-F125NC, WF-F105NV
1st water supply (only preparation)	25.50	1st water supply level to washing tub
Overflow error	21.50	The water supplied reach 2/3 of door
Bubble detectingatwashing/rinse/dehydrating	24.50	Bubble -detecting water level
Bubble detecting rinse water level	23.00	The water level which can detect bubbles
Water level which can open door	24.80 over	It is possible to open the door
Water level which can drive heater	25.50	Safety water level of wash heater
Water level which can reset the drain	25.50	The water level can be detected after 1st draining

※ If water level is 15KHZ below or 30 KHZ above , Sensor-pressur is out of order so needs changing.

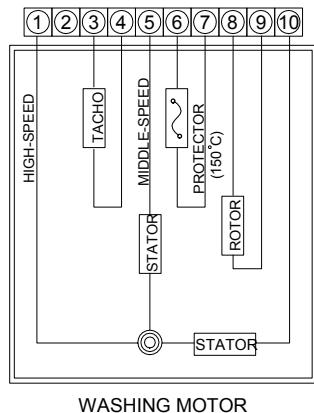
### 3-5. DESIGNATION OF MAIN COMPONENTS

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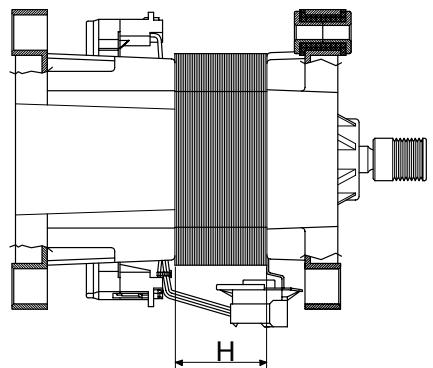
#### 3-5-1. Normal / Reverse Revolution of Motor and R. P. M. Control



<Figure1>



<Figure2>



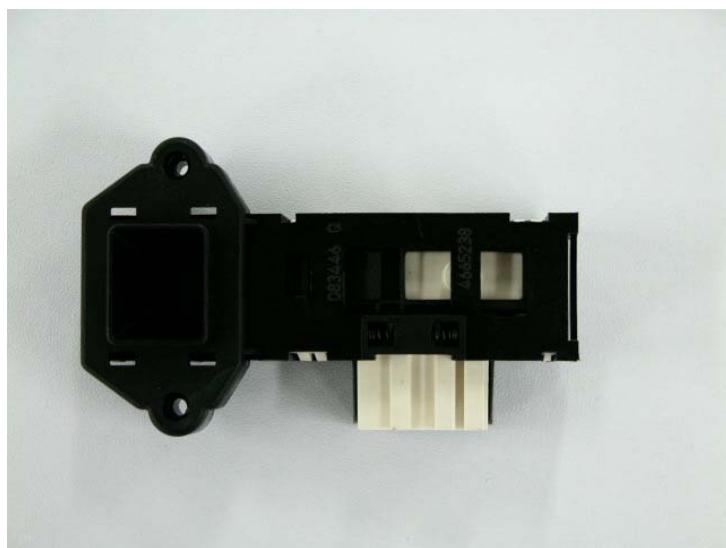
<Figure3>

( $\pm 7\%$ )	STATOR(5.1)	STATOR(5.1)	ROTOR(8.9)	TACHO(3.4)	PROTECTOR(6.7)	"H"(mm)	Code-No.	Remark
Resistance value	2.07Ω	0.90Ω	2.35Ω	34.3Ω	0	45	DC31-00002H	WF-F125NC, WF-F105NV, WF-F1254, WF-F1054S, WF-F1054, WF-F854S,WF-F854, WF-S1054, WF-S854S, WF-S854
Rated value	220~240V/50Hz							

#### 3-5-2. Door safety Device

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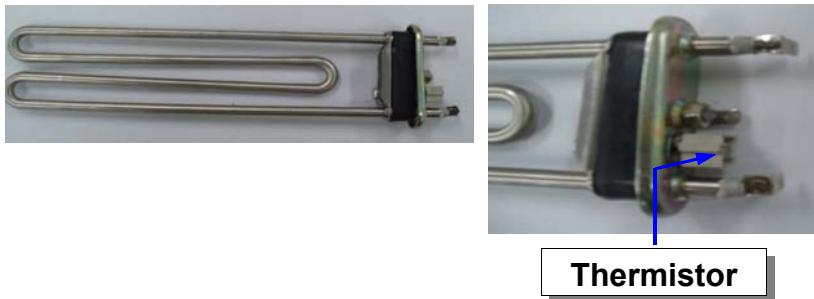
When Door is closed, door stay closed. if "set" is operated, power supplied to wires have bimetal keep the door closed, and electronical power flows between and make it operate.



DC64-00653A (ROLD)

### 3-5-3. Heater

- 1) Capacity : AC 230V/2000W
- 2) Location : Bottom of TUB
- 3) Function : Raise the water temperature supplied at the wash process.
- 4) Resistance value : 23~29Ω
- 5) Thermal Fuse : 128°C



### 3-5-4. Detergent tub and water supply valve

A Detergent tub is composed of housing and 3 drawers . supplied water flows into the 3 drawer-detergent tub by way of classifier at each washing process.

three open drainage way with detergent and supplied water by way of connector located under the housing flows into washing tub.

the water supply valve is composed of a hot water valve(1 way) and a cold water valve(2way) and water flow per Min in the valve is below.

	Hot water valve(1 way)	Cold water valve (2 way)	
		V1	V2
water flow(L/min)	10 ℥	10 ℥	5 ℥
resistance value	4.4kΩ	4.2 kΩ	4.2 kΩ
power consumption	AC 220v ~ 240V 50/60Hz		
usable water pressure	0.5 ~ 8 kg/cm³		

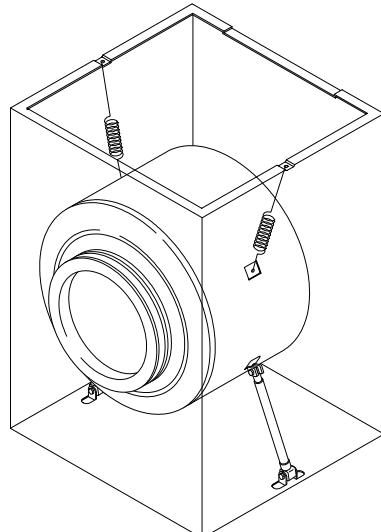


### 3-5-5. Shock absorber and buffer spring

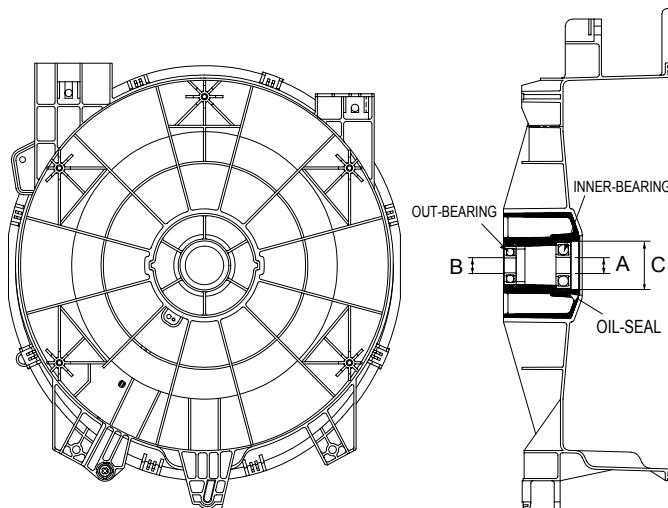
This wash machine is equipped with 2 Shock absorbers with same capacity and with 2 buffer springs. 2 Shock absorber are placed under the tub and outside case , 2 buffer springs are placed on the right and left of the upper side of outside case.

Shock absorber function: during wash, dehydration absorb the shock.  
buffer spring: buffering the vibration

device	capacity of Shock absorber
Shock absorber	8±2 kg



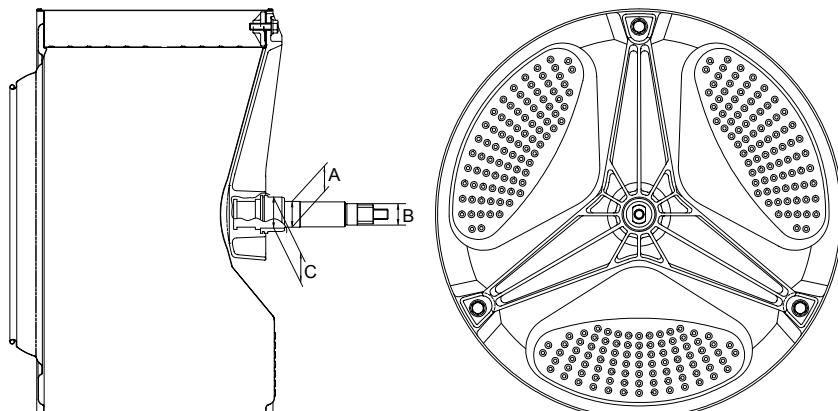
### 3-5-6. Assy-tub Back



(unit : mm)

TYPE	INNER-BEARING(A)	OUT-BEARING(B)	OIL-SEAL(C)	Assy-Tub Back	REMARK
I	ø 30	ø 25	ø 34.1	DC97-00214K	WF-F125NC, WF-F105NV, WF-F1254,WF-F1054S,WF-F1054, WF-F854S,WF-F854

### 3-5-7. Assy- Drum

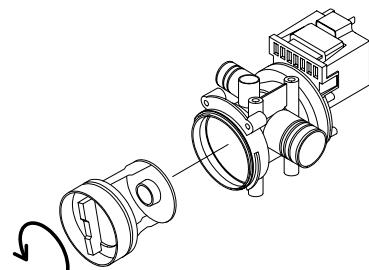


(unit : mm)

TYPE	(A)	(B)	(C)	CODE-NO.	REMARK
I	ø 30	ø 25	ø 35	DC97-01463J	WF-F125NC, WF-F105NV,WF-F1254,WF-F1054S, WF-F1054,WF-F854S,WF-F854

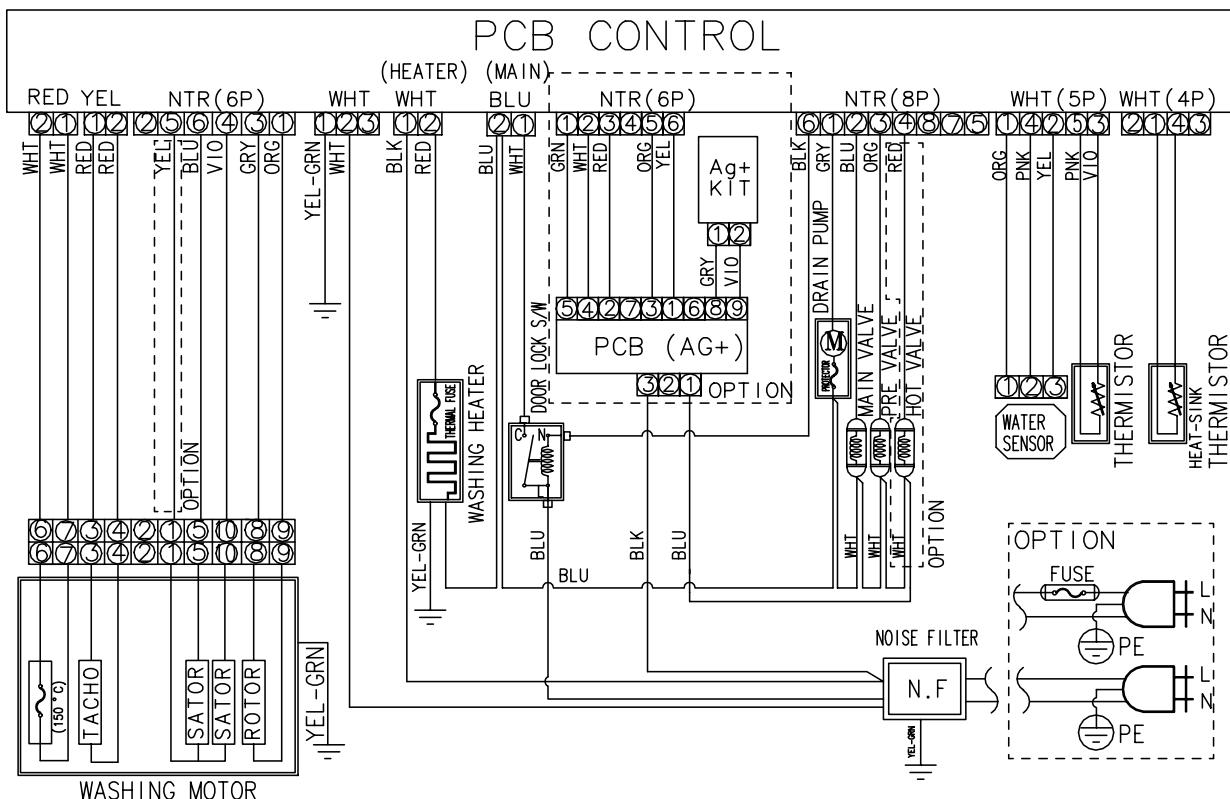
### 3-5-8. Assy-pump Drain

- 1) Capacity : AC 230V 34W
- 2) Location : Front bottom(R)
- 3) Resistance :  $160\Omega \sim 190\Omega$



## 9. SCHEMATIC-DIAGRAM (ROLD)

SCHEMATIC DIAGRAM



## **6. TROUBLE DIAGNOSIS**

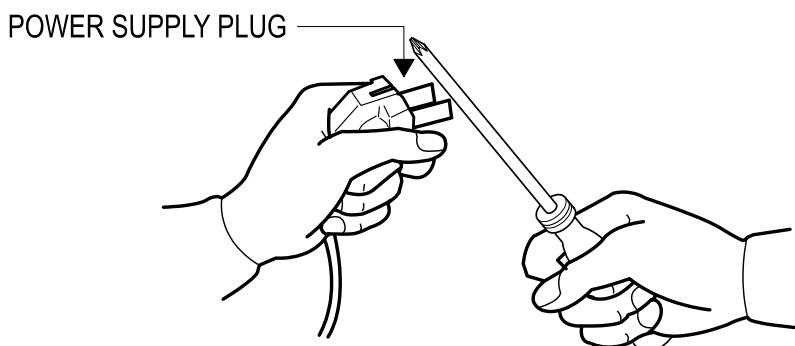
### **6-1. TROUBLE DIAGNOSIS**

- As the micom wash machine is configured of the complicate structure, there might be the service call. Below information is prepared for exact trouble diagnosis and suitable repair guide.

#### **Caution for the Repair and Replacement**

**Please follow below instruction for the trouble diagnosis and parts replacement.**

- 1) As some electronic components are damaged by the charged static electricity from the resin part of wash machine or the human body, prepare the human body earth or remove the potential difference of the human body and wash machine by contacting the power supply plug when the work contacting to PCB is executed.

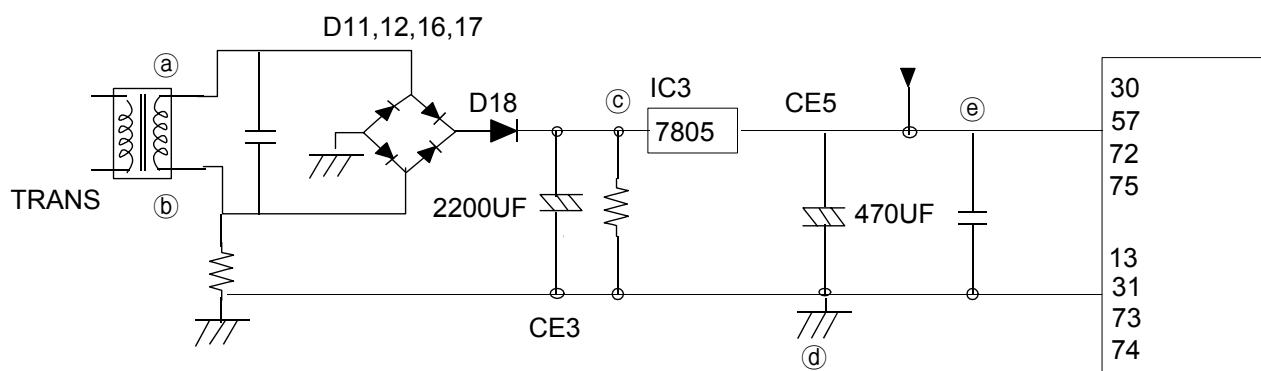
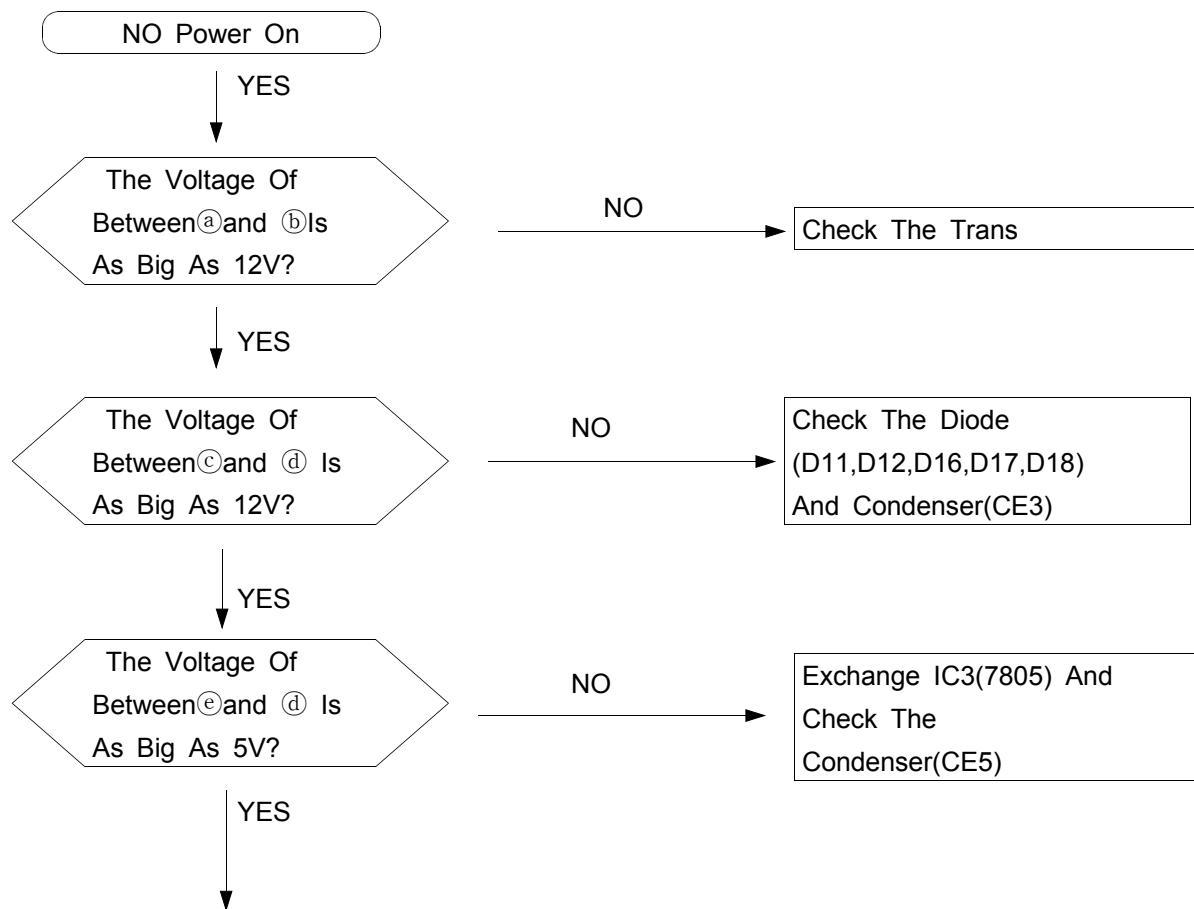


- 2) Since AC220~240V is applied to the triac T1 and T2 on P.C.B, the electric shock may occur by touching and be careful that the strong and weak electricity are mixed.
- 3) As the P.C.B assembly is designed for no trouble, do not replace the P.C.B assembly by the wrong diagnosis and follow the procedure of the trouble diagnosis when the micom is not operated normally.

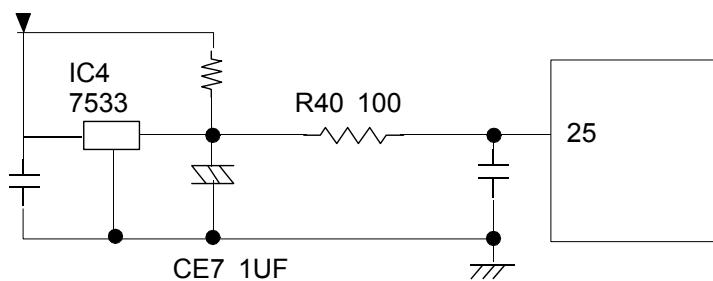
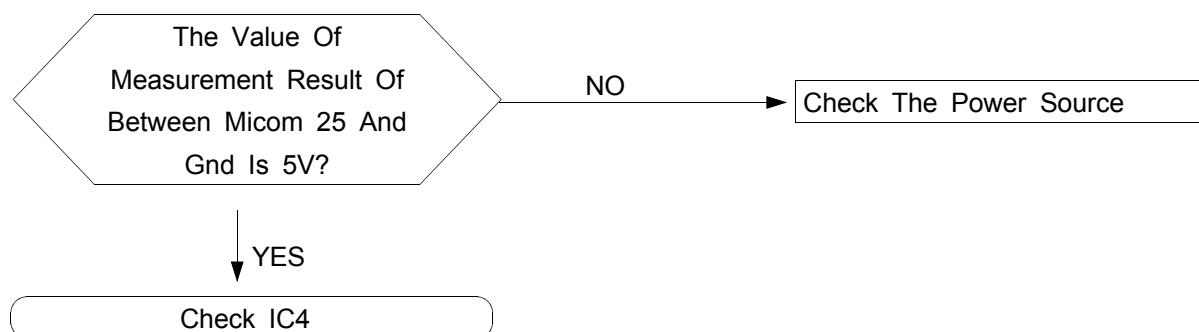
No	Item	Cause and treatment
1	The power is not supplied	<ul style="list-style-type: none"> <li>- Is the PCB connector connected well?</li> <li>- Is the voltage normal?</li> <li>- Is the power supply plug connected well?</li> <li>- Is the noise filter connected well?</li> <li>- Is the secondary output of the power supply transformation normal?</li> <li>- Is the fuse disconnected? (option)</li> <li>• If above points are not found, the PCB assembly is out of order. Replace it.</li> </ul>
2	The water is not supplied.	<ul style="list-style-type: none"> <li>- Is the knob open?</li> <li>- Did you push START/PAUSE button after selecting the course?</li> <li>- Is the water supply valve connected well?</li> <li>- Is the winding of the water supply valve continuous?</li> <li>- Is the connection and operation of the pressure switch normal?</li> <li>• If above points are not found, the PCB assembly is out of order. Replace it.</li> </ul>
3	The wash does not start though the water supply is stopped.	<ul style="list-style-type: none"> <li>- Is the connection and operation of the pressure switch normal?</li> <li>- Is the pressure switch hose damaged so that the air is leaked?</li> <li>- Is the pressure switch hose bent?</li> <li>- Check the operation of the water level switch.</li> <li>• If above points are not found, the PCB assembly is out of order. Replace it.</li> </ul>
4	The drum does not rotate during washing.	<ul style="list-style-type: none"> <li>- Is the belt connected well?</li> <li>- Is the winding of the motor continuous? (Rotor winding, stator winding, generator)</li> <li>- Is the motor protector normal?</li> <li>• If above points are not found, the PCB assembly is out of order. Replace it.</li> </ul>
5	The drum rotates by one direction during washing. (The drum rotates to one direction for SPIN.)	<ul style="list-style-type: none"> <li>- The PCB assembly is out of order. Replace it. (Inversion relay open trouble)</li> </ul>
6	Drainage problem.	<ul style="list-style-type: none"> <li>- Is the drainage hose bent?</li> <li>- Is the winding of the drainage pump continuous?</li> <li>- Is the drain filter clogged by the waste?</li> <li>• If above points are not found, the PCB assembly is out of order. Replace it.</li> </ul>
7	Dehydration problem.	<ul style="list-style-type: none"> <li>- The unbalance is detected.</li> <li>- Put in the laundry uniformly and start again.</li> </ul>
8	Abnormal noise during SPIN.	<ul style="list-style-type: none"> <li>- Is the pulley nut loosen?</li> <li>- Is the transport safety device removed?</li> <li>- Is the product installed on the level and stable place? (Little noise may be generated during the high-speed SPIN.)</li> </ul>
9	Leak breaker or current/leak breaker is down during washing.	<p>&lt;When the leak breaker and current breaker is installed separately&gt;</p> <ul style="list-style-type: none"> <li>- When the leak breaker is down, check and make the earth of the outlet.</li> <li>- When the current is down, the current is leaked.</li> </ul> <p>&lt;Is the breaker down when the leak/current breaker is combined?&gt;</p> <ul style="list-style-type: none"> <li>- Check the rated capacity of the current and leak breaker.</li> <li>The current breaker may be down due to the lack of the current when the wash machine and other apparatus are used.</li> <li>In this case, execute the cold water wash to check whether the current capacity is lack.</li> </ul>
10	The heating is not executed.	<ul style="list-style-type: none"> <li>- Is the wash heater terminal unplugged?</li> <li>- Is the wash heater normal?</li> <li>• If above points are not found, the PCB assembly is out of order. Replace it.</li> </ul>

## 6-2. PROBLEM CHECKING AND METHOD OF PCB

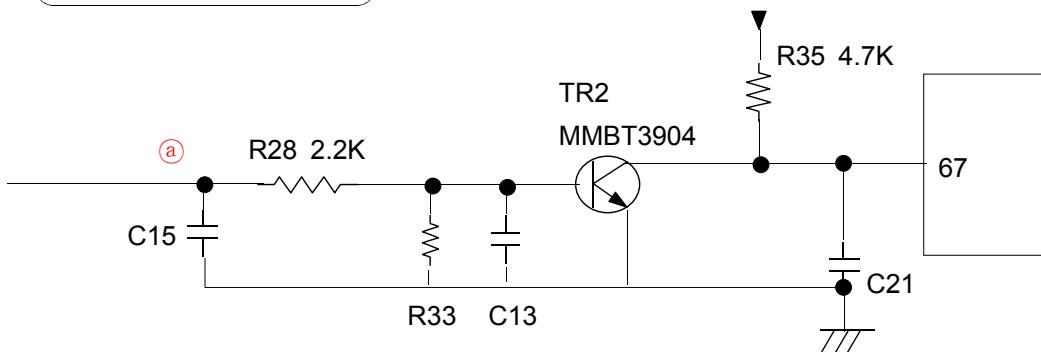
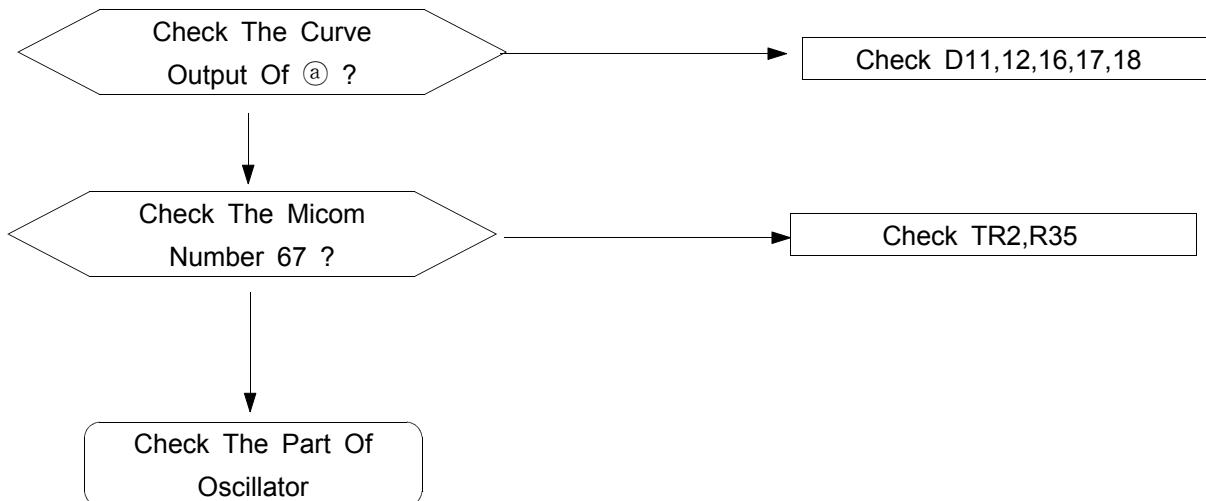
### 6-2-1 The Part Of Power Source



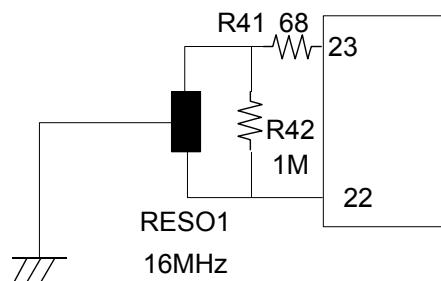
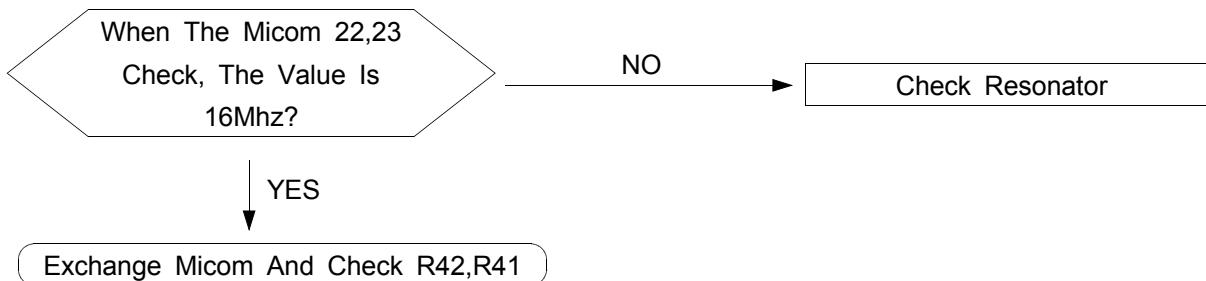
## 6-2-2. Reset Part



### 6-2-3. Interrupt Part



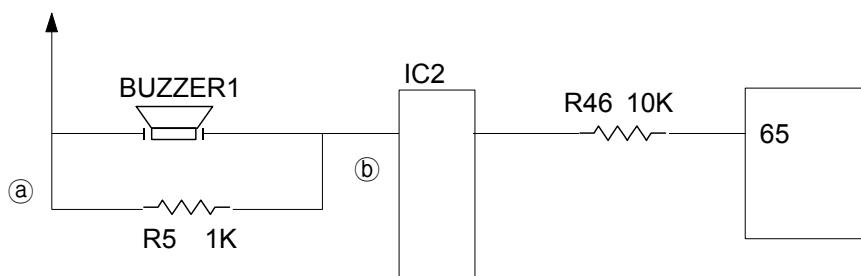
#### 6-2-4. Checking The Part Of An Oscillator



#### 6-2-5. Check The Part Of Buzzer



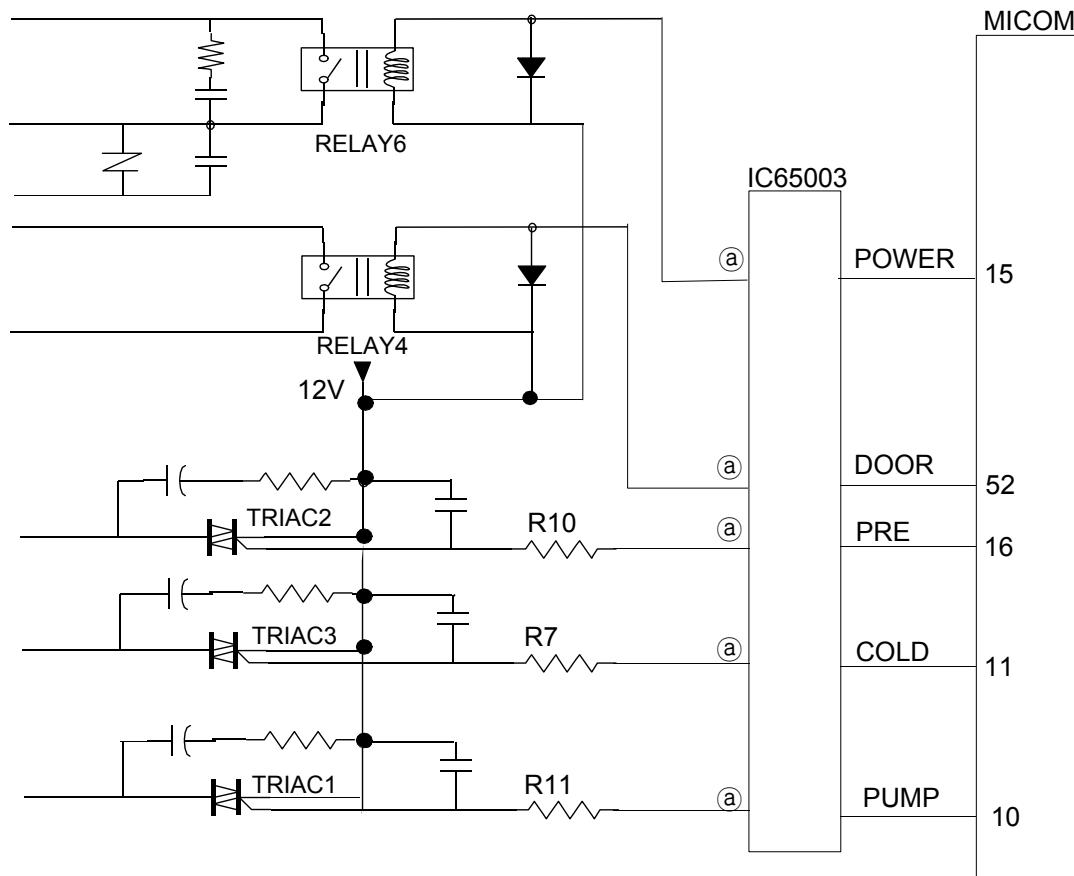
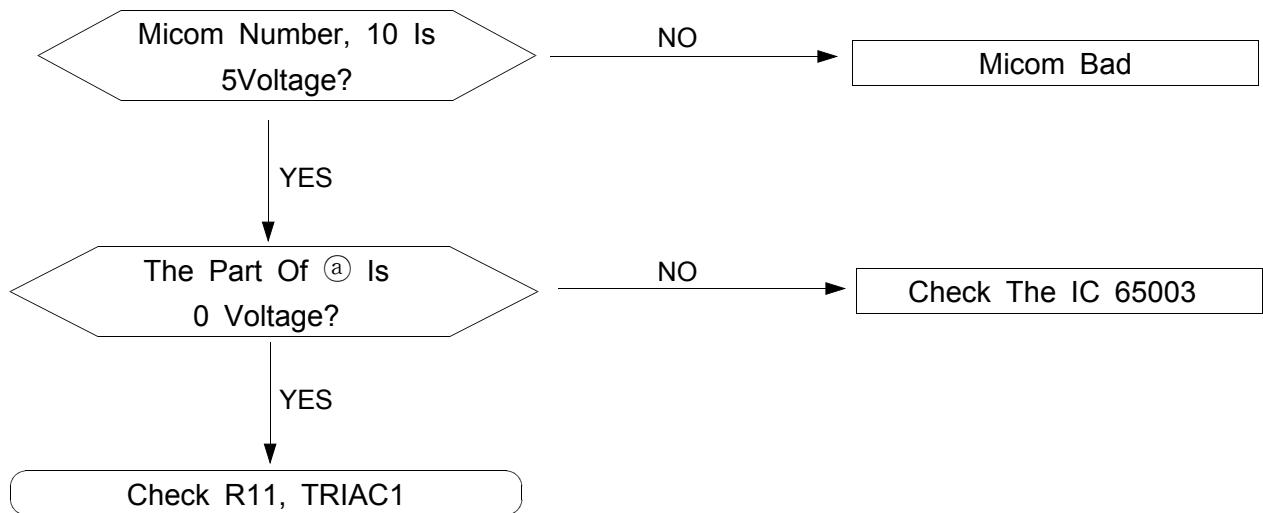
Exchange BUZZER1,  
Check R5,R46



## 6-2-6. Driving Part Checking

◆ Confirm The Output Of DC5V, When The Every Part Of Micom Number Check,  
According To The Some Problem Condition

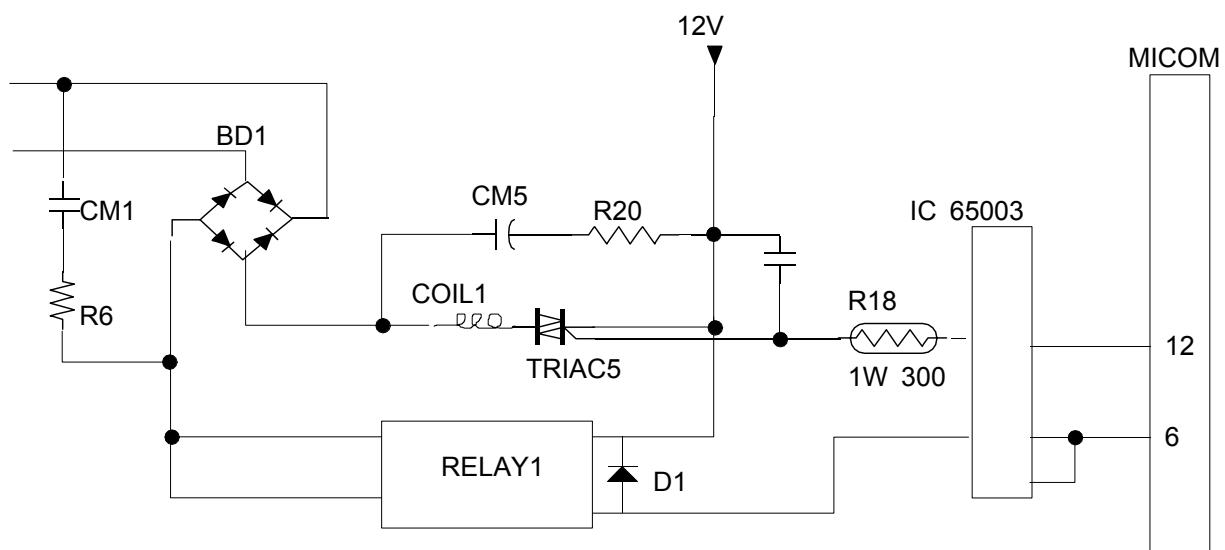
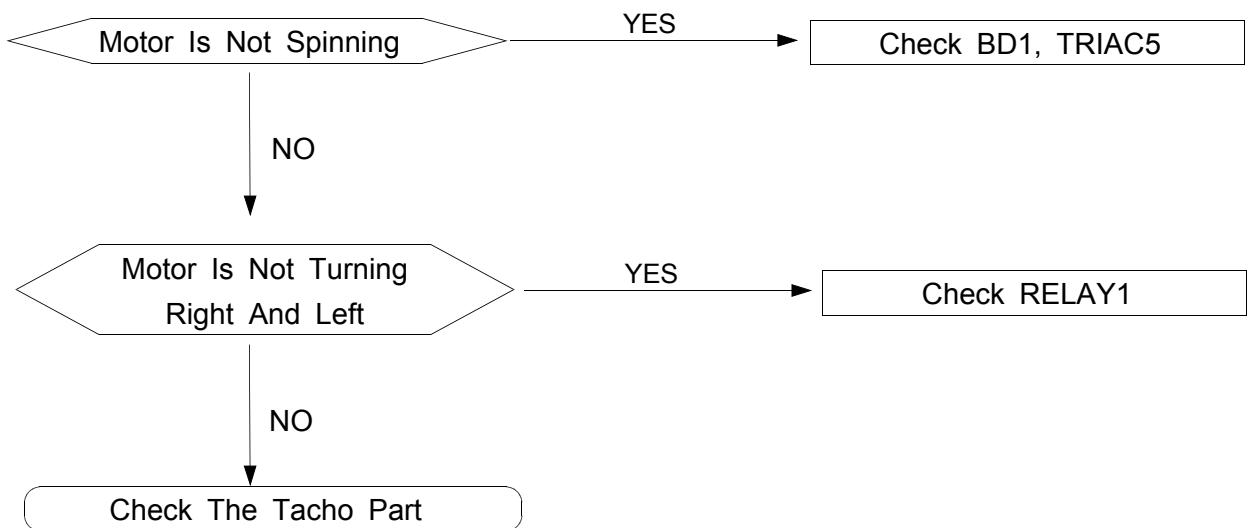
ex) When The Drain Is Not Operating But Pump Motor Is Operating, Check  
The 5Voltage Of Micom



\* Check The Micom 18th In The Above Method When The Cold Water Is Bad

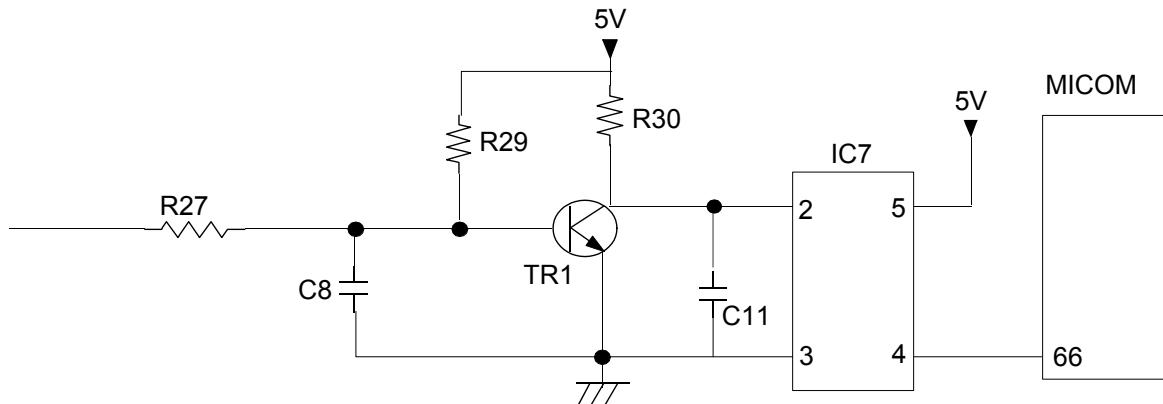
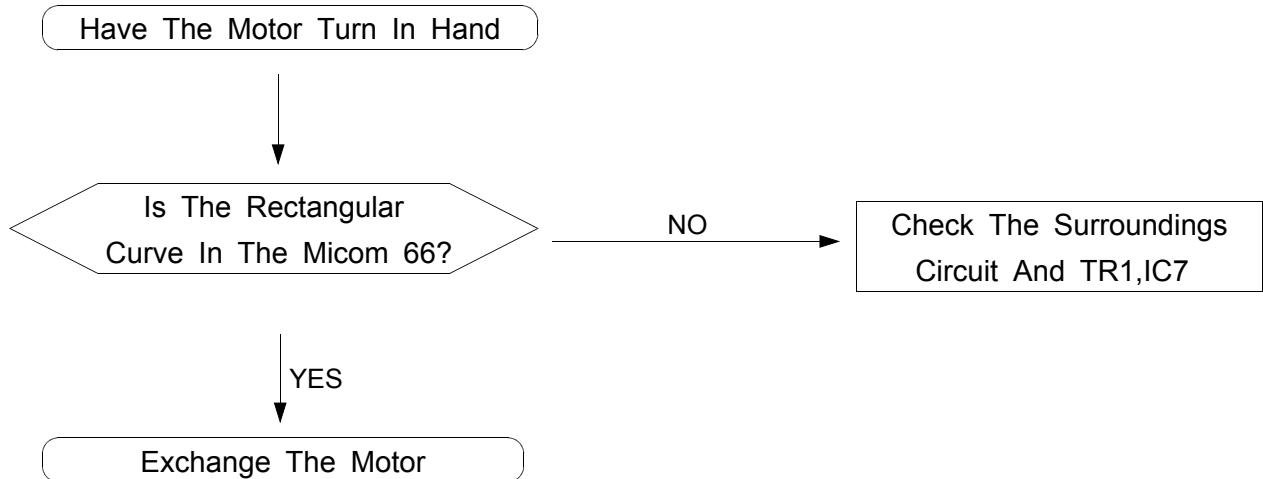
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#### 6-2-7. Confirm The Driving Part Of Motor

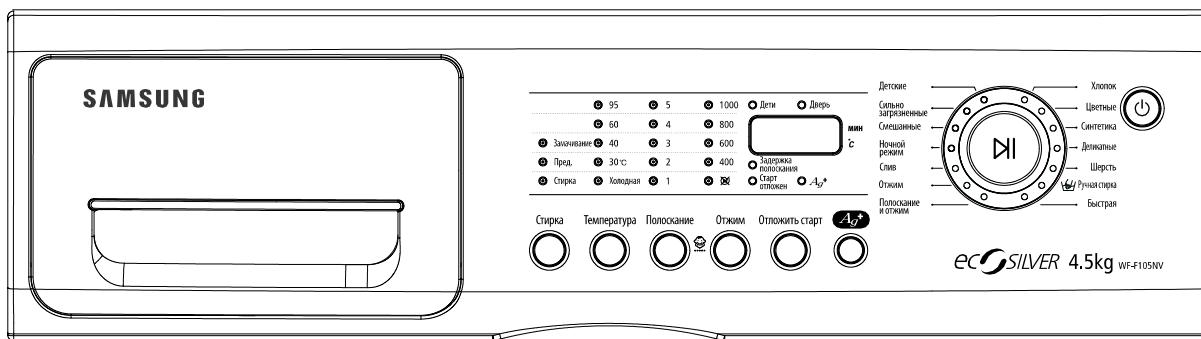


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#### 6-2-8. Checking The Tacho Part



## 6-3. DETAILED DIAGNOSIS



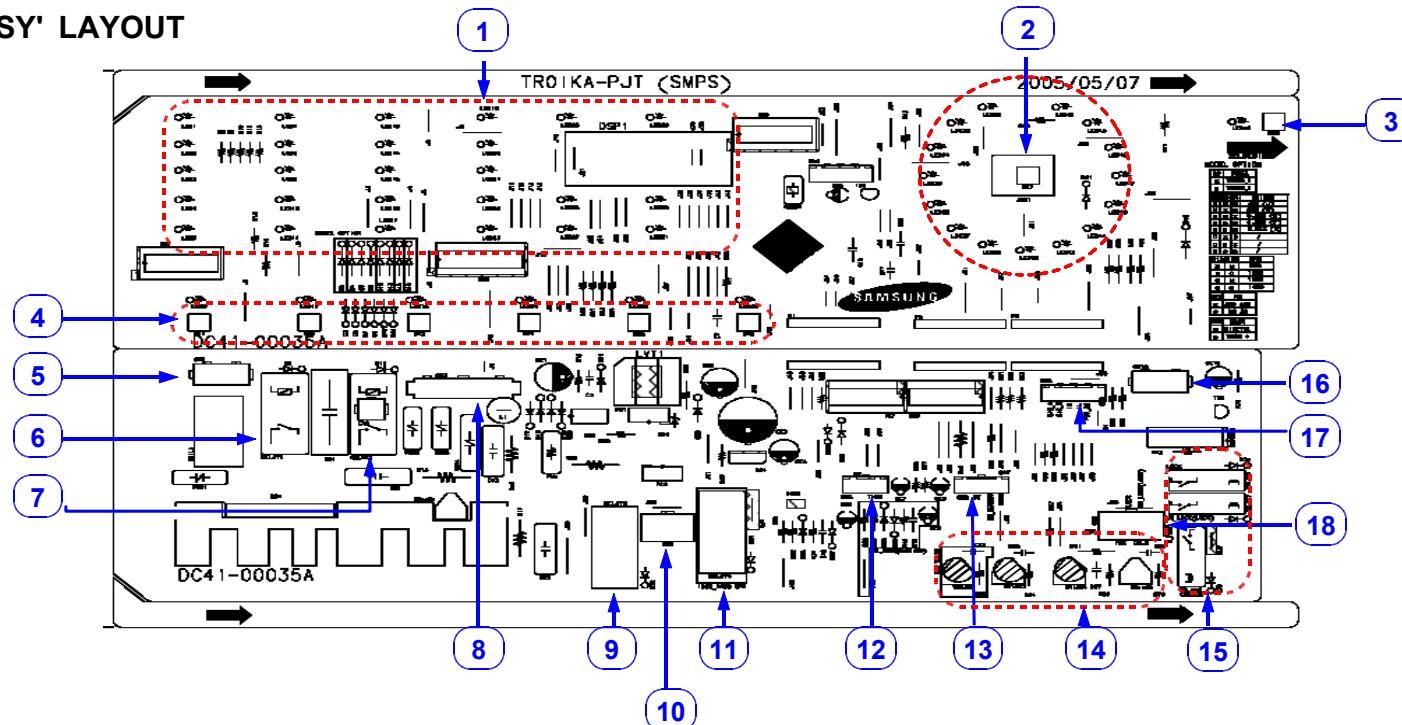
### 1. Driving Compartment Test Mode

- Hold down the ① and the ② buttons simultaneously and then press the Power button ④.  
(All of the LEDs light up and the display shows t1 in 3 seconds.)
- The driving part can be tested when you press the push button dial ③ right after entering into the TEST MODE.

No	Check	Test Method	Description
1	Motor	Check if the motor operates or check the Motor terminals.	Motor Wiring (Red/White①/Blue/Pink/Violet/White②) Resistance between Blue-Red, Red-White① and White①-Blue should be $2.0\Omega \pm 10\%$ .
2	Water Valve	Check if it supplies water or check the Water Valve terminals.	Check resistance of the Water Valve terminals.
3	Drain Pump	Check if it drains normally or check the pump terminals.	Check resistance of the Drain Pump terminals.
4	Door S/W	Check if it works at the Cotton course or check the Door S/W terminals.	Check resistance of the Door S/W terminals.
5	Heater	Check if it works by changing temperatures at the Cotton course.	Check resistance of the Heater terminals.
6	Water Pressure Sensor	Refer to Page 14. (Water Level Table at each Course)	Check frequency (Hz) between the Water Pressure Sensor terminals.
7	Thermistor	Check its resistance.	It varies according to temperatures. (If it is $\infty$ or 0, replace it.)
8	MAIN PCB	1. Press the buttons on the display. Check if all of the LEDs work. 2. Check if voltage between the white and the black terminals is 220V~240V.	1. Replace the SUB PCB. 2. If not, replace the Noise Filter.

## 9. WIRING DIAGRAM

### 9-1. PCB ASSY' LAYOUT

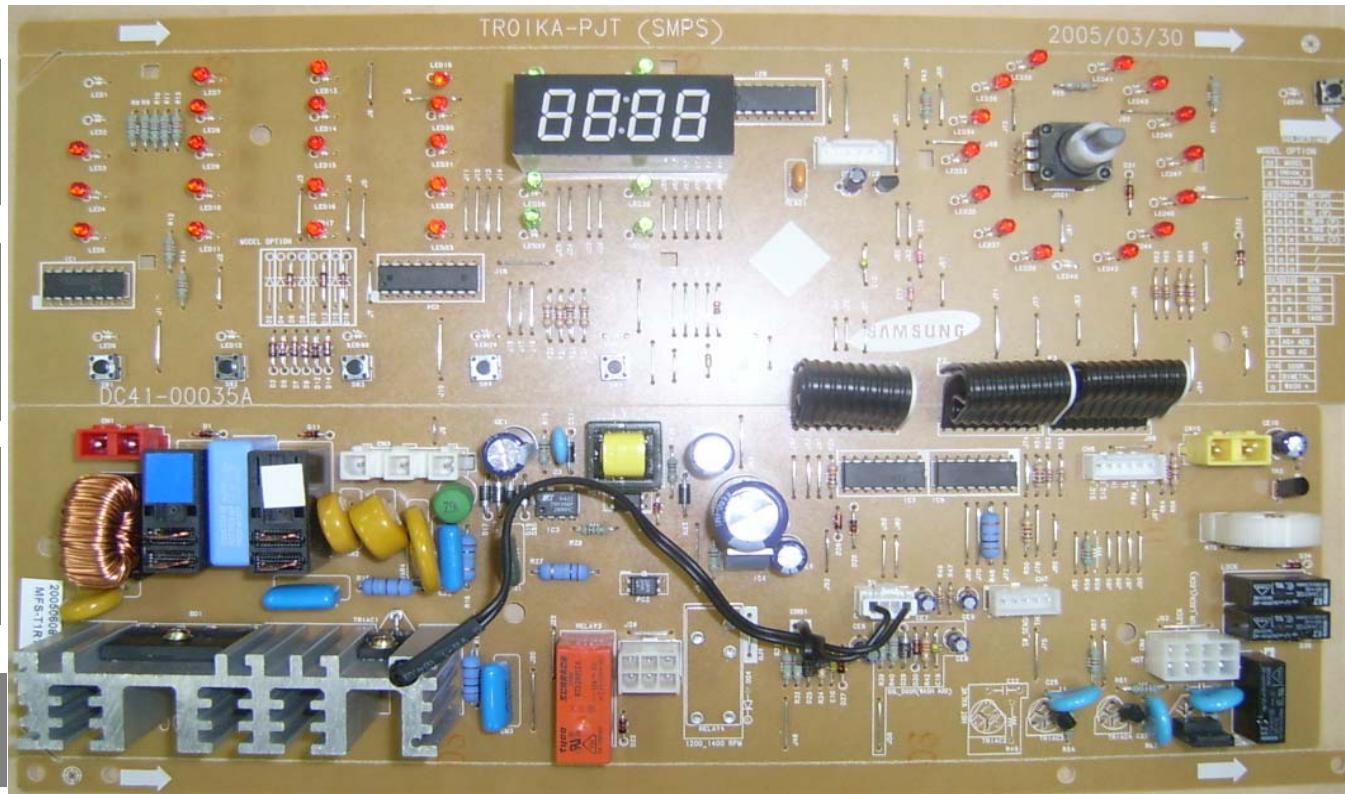


Item	Part Number	Description
1	Display	Displays or indicates operations or functions
2	Jog_Dial	Starts/stops an operation to select a course
3	Power_key	Turns the power on/off
4	Key	Selects and processes each function
5	CN1	Detects if the door is open or closed
6	RELAY1	In case of Power_On/Off, supplies or disconnects AC power
7	RELAY2	Disconnects Power from the Heater

Item	Part Number	Description
8	CN3	AC1과 GND를 연결함
9	RELAY3	Motor의 정/역 방향을 제어함
10	CN4	Motor의 동작 Wire를 연결함
11	RELAY4	고 RPM진행시 On/Off 제어함
12	CN6	Heat Sink의 온도Sensor를 연결함
13	CN7	수위,온도Sensor를 연결함
14	구동부	냉/온/Pre/Drain 동작용 부품

Item	Part Number	Description
15	Door System	Parts for Door Lock/Unlock
16	CN10	Connects Motor Tacho Sensor
17	CN8	Connects the silver nano wire
18	CN9	Connects the driving system wire

## 9-2. Connector & Relay Terminals Description (MAIN PCB)



### RELAY1

- A) Connects to AC2
- B) Connects to AC2-1
- COMMON

### RELAY2

- A) Connects to the HEATER
- B) Connects to the HEATER

### CN1

- A) Connects to the DOOR LOCK Signal
- B) Connects to the DOOR LOCK Signal

### CN3

- ② Connects to AC1
- ③ Connects to GROUND

### CN4

- ① Connects to the MOTOR STATOR
- ③ Connects to the MOTOR STATOR
- ④ Connects to the MOTOR STATOR
- ⑤ Connects to the MOTOR STATOR
- ⑥ Connects to the MOTOR STATOR

### CN6

- ① Connects to the TEMP SENSOR
- ④ Connects to the TEMP SENSOR

### CN7

- ① Connects to GROUND
- ② Connects to 5V
- ③ Connects to 5V
- ④ Connects to the WATER SENSOR
- ⑤ Connects to the TEMP SENSOR

### CN9

- ① Connects to the DRAIN-MOTOR
- ② Connects to the COLD VALVE
- ③ Connects to the PRE VALVE
- ④ Connects to the HOT VALVE
- ⑥ Connects to the ROLD DOOR S/W

### CN8

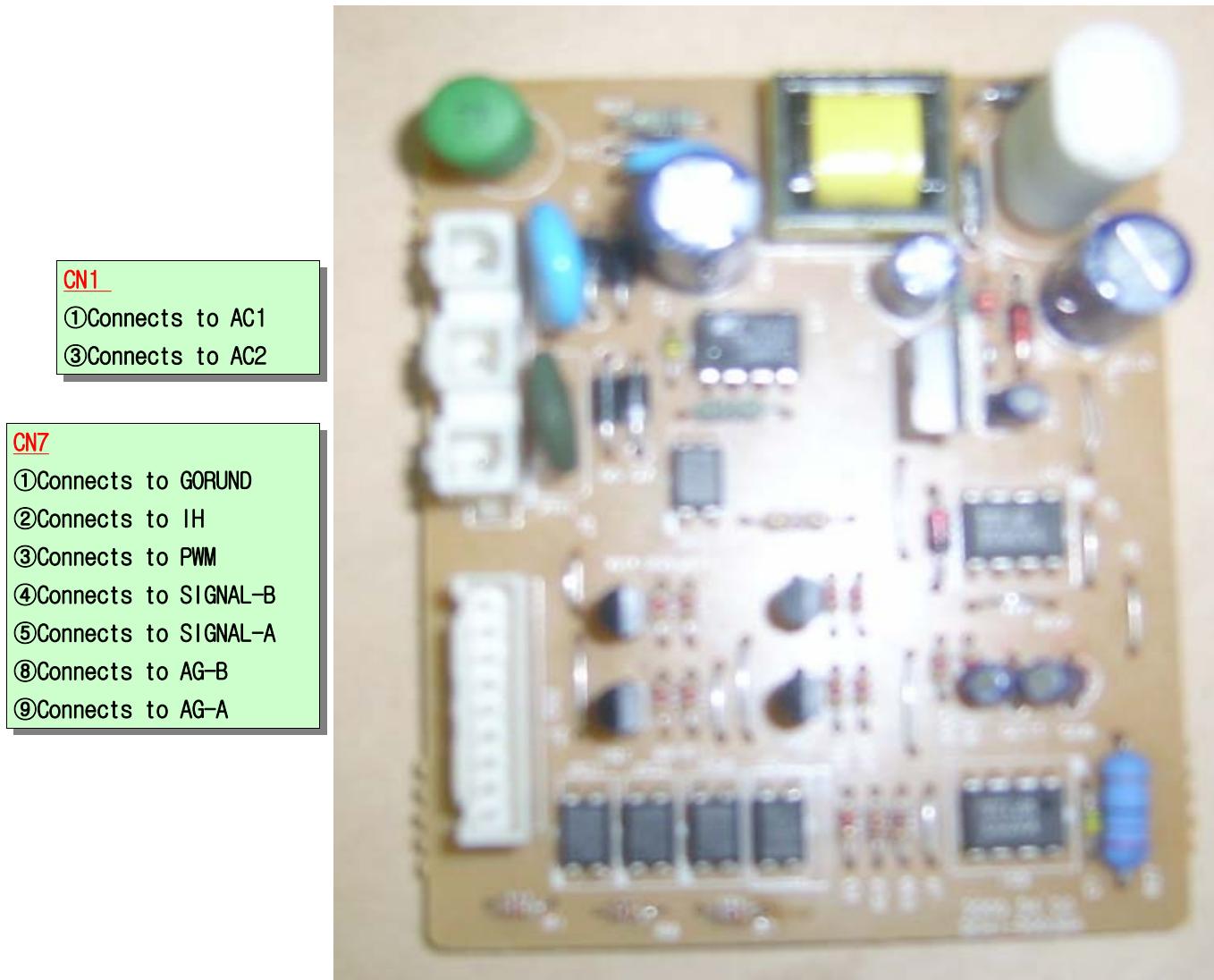
- ① Connects to SIG-A
- ② Connects to SIG-B
- ③ Connects to IH
- ⑤ Connects to PWM
- ⑥ Connects to GROUND

### CN10

- A) Connects to the TACHO SENSOR
- B) Connects to the TACHO SENSOR

### 9-3. Connector & Relay Terminals Description (AG-KIT PBA)

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## 4. ALIGNMENT AND ADJUSTMENTS

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### 4-1. GENERAL ERROR FUNCTION

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1. An occurrence of an Error will make a sound of error melody for 5sec and continuously show one of the Error Displays from the following errors. (But, Fault Check Led will flash for 0.5sec.)
2. All of the steering parts will be off at that time until that error was released.

#### 3. Water Supply Error

- If there is no higher change in water frequency than 100Hz for 2 minutes during the initial time of water supply and if water level doesn't reach the preset level in 10 minutes, this error will occur.  
This error will be released using Start/Pause button, which performs the initial condition of operation.
- Display : "4E"

#### 4. Water Drain Error

- If water level frequency is still lower than the reset level frequency (25.20kHz) in 10 minutes after starting of water drain, this error will occur.  
This error will be released using Start/Pause button, which performs the initial condition of operation.
- Display : "5E"

#### 5. Over Flow Error

- If an abnormal water level frequency is sensed (for occurrence of Over Flow :21.00kHz), Auto Power Off may release this error and continuously progress water drain until the frequency reached 25.00kHz.
- If Over Flow is also sensed even after the following check of water level frequency indicating that error, it functions to progress water drain.
- Display : "OE"

#### 6. Door Open Error

- This error will be released by closing Door.
- Display : "dE"

#### 7. Unbalance Error

- This error will be released by pressing start/pause S/W.
- DISPLAY : "UE"

#### 8. Water Heater Error

- This error will be released by turning off Power S/W.
- Display : "HE1"(Over Heat),
- Display : "HE2", indicating no operation of HE.

#### 9. Pressure S/W (Single Part Trouble) Error

\* Frequency signals(kHz) generated by water level S/W

Water Level	Low	High
Abnormal Frequency	30.00 KHz	15.00 KHz

- If the above frequency signals are displayed longer than 5sec, it indicates Pressure S/W Error.
- Drain water for 3 minutes for that Error, and turn OFF water drain pump. Pressure S/W Error display " IE" will be shown. .

#### 10. Abnormal Water Temperature ERROR

- Water drain begins if abnormal water temperature is sensed at the initial time of water supply. If the frequency higher than 25.20KHz is sensed, water will be drained by force.
- Display : "CE"
- This error will be released by turning off Power S/W.

---

## **11. Natural Drain/Water Leak Error**

- If more than 4 times of water supply and safe water level of Heater are sensed for each course, this error will occur.
- Display : "**LE**"
- This error will be released by turning off Power S/W.

## **12. Tacho Error**

- If Motor Tacho is abnormal, this error will occur.
- If Tacho signals are inputted less than 2 for 2sec after Motor started, this error will occur.
- Display : "**3E**"
- This error will be released by turning off Power S/W.

## **13. Motor TRIAC Short Error**

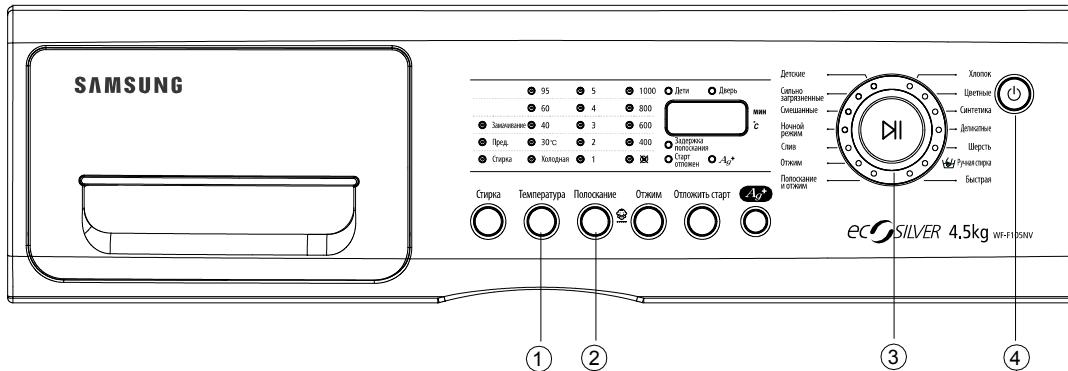
- If Tacho signals are inputted more than 300 every 1sec in the operational interval less than 90RPM, this error will occur.  
    Turn off Power S/W at that time.
- Display : "**bE**"
- This error will be released by turning off Power S/W.

## **14. Thermistor Abnormal Error**

- If Thermistor circuit is abnormal, this error will occur.
- If Thermistor is lower than 0.2V or higher than 4.5V, this error will occur.
- Display :"**tE**"
- This error will be released by turning off Power S/W.

## 4-2. TEST MODE

---



### 1. Driving Compartment Test Mode

- Hold down "1" and "2" keys simultaneously and then press POWER S/W "4" on.  
(Whole lamps turn on and display show "t1" after 3 Seconds.)
- The driving compartment can be tested when you press "3" key right after entering into the initial stage of the TEST MODE.

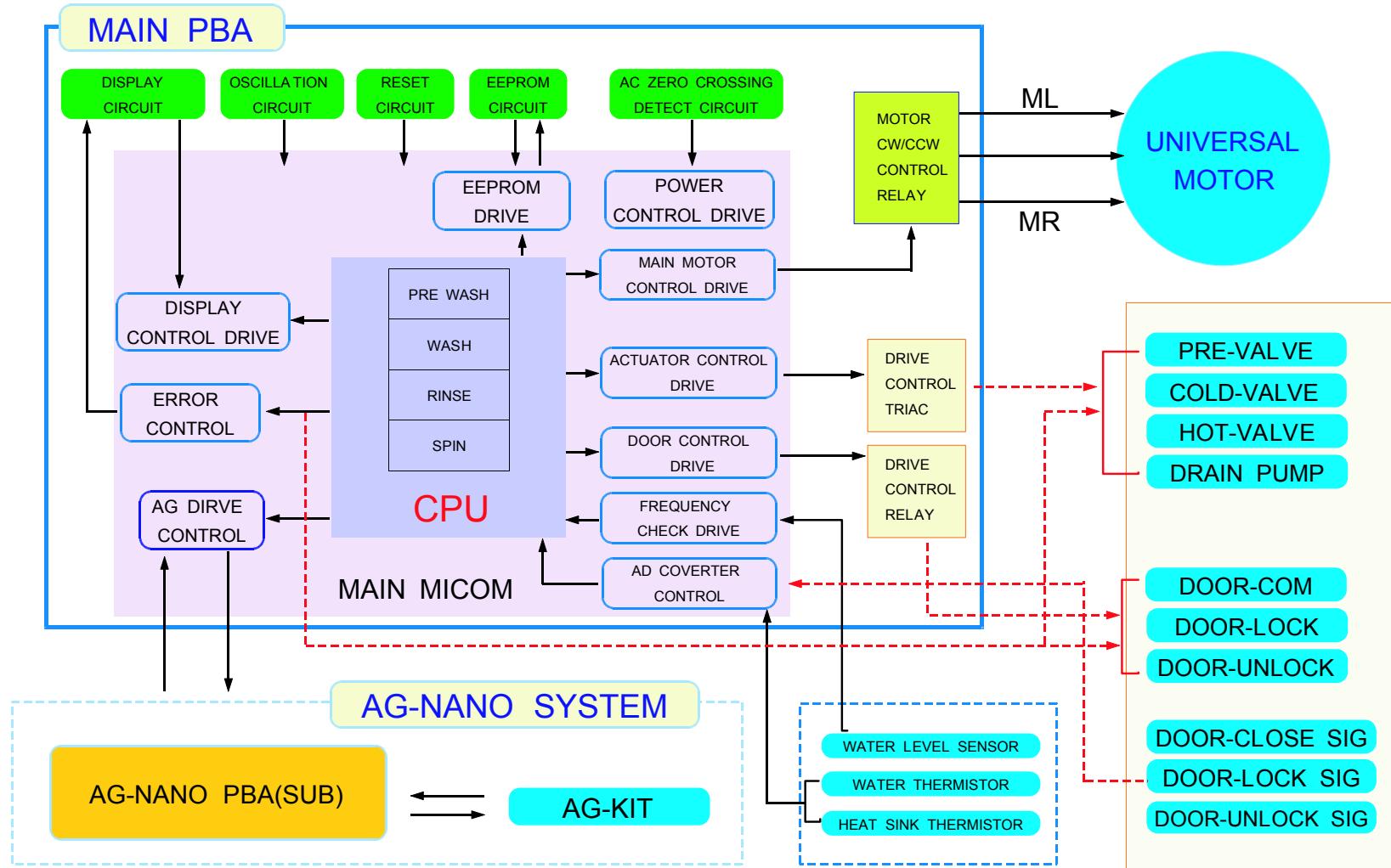
#### • Driving Compartment Test

Pre-wash VALVE ON(0.3sec) → OFF(0.3sec) → COLD VALVE ON(0.3sec) → [OFF(0.3sec) → HOT VALVE ON (0.3sec) : **OPTION**] → OFF(0.3sec) → Rinse VALVE ON(0.3sec) → OFF(0.3sec) → Pump MOTOR ON(0.3sec) → OFF(0.3sec) → MOTOR Left (0.5sec) → OFF(0.5 sec) → MOTOR Right (0.5sec) → OFF(0.3sec) → HEATER RELAY ON(0.3sec) → OFF(0.3sec) → DOOR OPEN (Function continues when door is closed)

### 2. THERMISTOR TEST MODE

- Hold down "1" and "2" keys simultaneously and then press POWER S/W "4" on.  
(Whole lamps turn on and display show "t1" after 3 Seconds.)
- Press the "1" key and display shows "t2"
- Press the "3" key and display shows the inside temperature of tub.

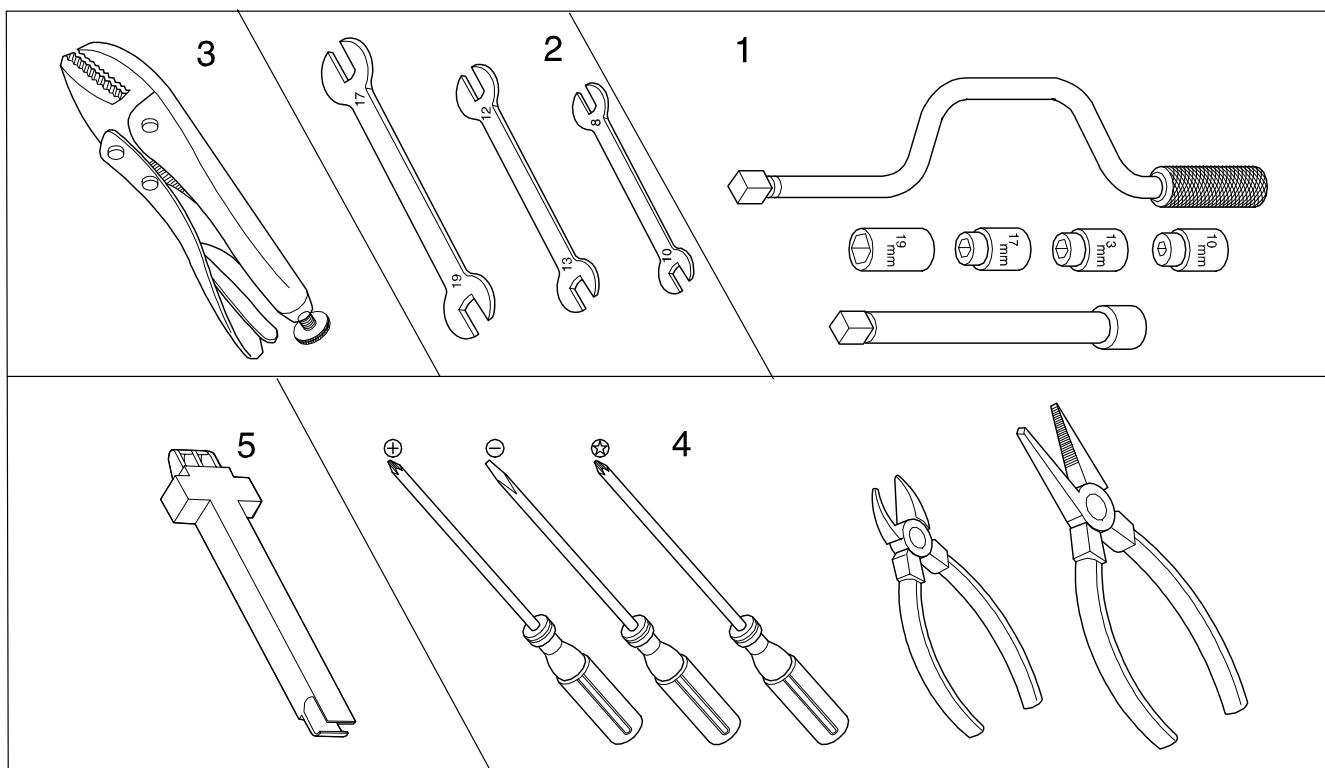
## 8. BLOCK DIAGRAM



## 5. ASSEMBLY AND DISASSEMBLY

### 5-1. TOOLS FOR DISASSEMBLY AND ASSEMBLY

NO.	TOOL		
1	Box driver	10mm 13mm 19mm	Heater (1) Motor (1), Balance (5), 2 holes of each left and right of the shock absorber 1 Pulley hole
2	Double-ended spanner	10, 13, 19mm	Replaceable for the box driver. Since the bolt runs idle when the box driver is used, use the box driver 17mm.
3	Vice pliers		Tool to protect the idle and abrasion of the bolt for the box driver.
4	Other(Driver, Nipper, Long nose)		General tools for the after service.
5	JIG for the Tub		1 (Disassemble and Assemble)



## 5-2. ASSEMBLY AND DISASSEMBLY

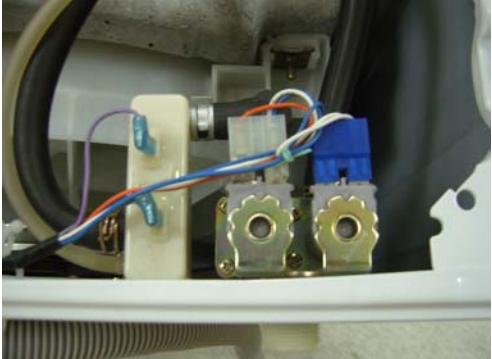
Warning! To avoid risk of electrical shock, personal injury or death, disconnect the power to the washing machine

Part Name	Descriptive Picture	How To Do
ASS'Y-COVER TOP		<p>① Remove the two screws holding the Top Cover at the back of the unit.</p>
		<p>② Remove the top-cover through pushing and pulling.</p>
		<p>③ Then, the Water (Pressure) Sensor, Noise Filter and Water Valve can be replaced.</p> <p style="text-align: right;">→ <b>sensor pressure</b></p> <p style="text-align: right;">→ <b>water valve</b></p> <p style="text-align: right;">→ <b>noise filter</b></p>

Part Name	Descriptive Picture	How To Do
FRAME FRONT		① Remove the Top Cover and the Ass'y Drawer.
		② Remove the two screws on the front of the control panel.
		③ Remove the control panel by disconnecting the connector that connects PCB to the wire-harness.
		④ Pry open the Cover Filter with an object such as a coin. Pull down the Door Lever and open the Ass'y Door.

Part Name	Descriptive Picture	How To Do
FRAME FRONT		⑤ Remove the screw on Cover Front.
		⑥ Insert a flat head screwdriver into the gap and pry down the Cover Front (Left) to separate it.
		⑦ Remove the Wire Diaphragm from the Frame Front and unseat the Diaphragm.
		⑧ Remove the 7 screws on the frame front.  

Part Name	Descriptive Picture	How To Do
BELT		Before removing the belt, should be opened the Cover Bottom.
		<ul style="list-style-type: none"> <li>① Remove the belt before the re-assembly.</li> <li>② Ensure the belt is placed on the center of the motor pulley.</li> </ul> <p>&lt;Belt Assembly&gt;</p> <p>Hang the belt on the motor pulley(①) before placing it around the pulley (②)</p>
MOTOR		<ul style="list-style-type: none"> <li>① Remove the wire housing from the motor.</li> <li>② Remove the bolts holding the motor by using the power screwdriver.</li> <li>③ Remove the motor.</li> </ul>

Part Name	Descriptive Picture	How To Do
Water Supply Valve		<p>① Remove the fixing screws for the water supply valve.</p>
		<p>② Disconnect the valve wires.          ③ Separate the water hoses.</p>
Water Level Sensor		<p>① Remove the top cover.</p>
		<p>② Remove the fixing screws for the water level sensor.          ③ Disconnect the water level sensor harness.          ④ Disconnect the hose pressure.          ⑤ Replace the water level sensor.</p>

Part Name	Descriptive Picture	How To Do
Door-Hinge		<ul style="list-style-type: none"> <li>① Remove the fixing screws holding the Door-Glass.</li> <li>② Separate the glass.</li> </ul>
		<ul style="list-style-type: none"> <li>③ After removing the two screws holding the Holder Glass, replace the Door Hinge.</li> <li>④ After putting them back together, check if the screws holding the Door Hinge is fastened properly.</li> </ul>
Drain Pump		<ul style="list-style-type: none"> <li>① Insert the flat head screwdriver into the slot on the top of the Cover Filter and lever it down to separate it.</li> </ul>
		<ul style="list-style-type: none"> <li>② Unscrew the drain filter by turning it counter clockwise. - The water remaining inside could flow out. So, put an empty bowl on the floor to hold the water.</li> </ul>

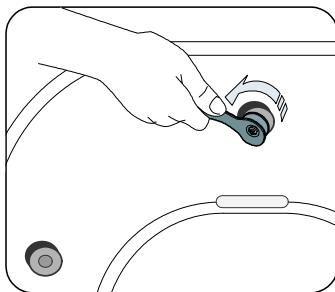
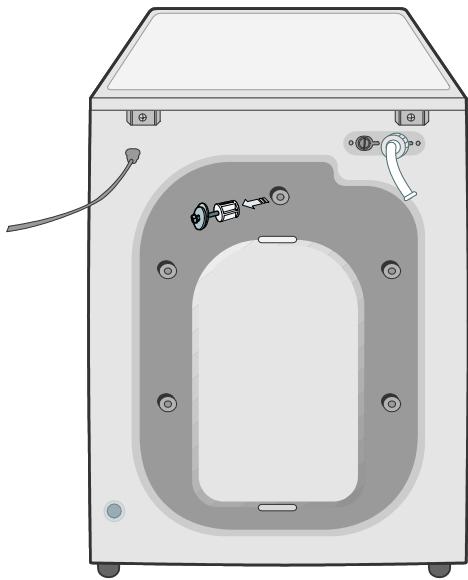
Part Name	Descriptive Picture	How To Do
		<p>③ Tilt the unit backward and take out the drain pump.</p>
		<p>④ Disconnect the incoming water hose and the wire harness.          (Caution: Check if the unit is plugged out. There is possibility of electric shock.)</p>
		<p>⑤ Separate the Hose Filter Tub and the Drain Hose.</p>
<p>* CHECK POINT</p> <ol style="list-style-type: none"> <li>1. Remove the Drain Filter and check if there are foreign substances (coin, buttons, etc) blocking inside - If so, clear the inside.</li> <li>2. Check if the wire harness is connected properly - If not, connect it properly.</li> <li>3. If water leaks, check if the Clamp Hose and the Cap Drain are assembled tightly - If not, assemble them tightly.</li> </ol> <p>Remove the water remaining inside by turning the Filter counter clockwise.</p>		

Part Name	Descriptive Picture	How To Do
Door S/W		① Open the Door.
		<p>② Remove the Spring Diaphragm and separate the Diaphragm from the Frame Front.</p> <ul style="list-style-type: none"> <li>- Insert the flat head screwdriver and pry up the spring to remove the Spring Diaphragm.</li> <li>- The Diaphragm could get damaged when taking it out. So, unseat it in one direction slowly.</li> </ul>
		<p>③ Remove the screws holding the Door S/W.</p> <p>④ Take out the Door S/W.</p> <p>⑤ Disconnect the wire connector. (Press the hook to unlock the tab and plug it out.)</p>
Heater		① Remove the Frame-Front.

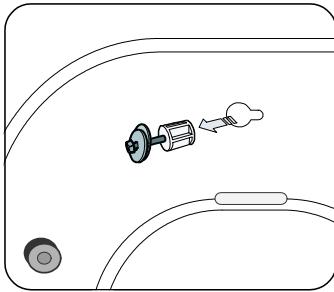
Part Name	Descriptive Picture	How To Do
		② Disconnect the Connector Housing.
		③ Remove the nut holding the Heater and separate the Heater.
		④ Take out the Heater from the Tub. (※ Caution: Be sure to insert the Heater into the Bracket in the Tub. If not, it may cause a fire. And, make sure to have the Packing seating on its place. Fasten the nut with 5Kgf/cm <sup>2</sup> . If the nut is fastened loosely, it may cause water leakage.)

## 1-2.Precautions upon Installation

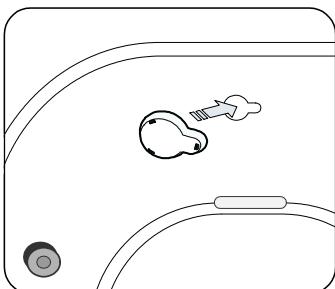
### ■ How to Remove Shipping Bolts



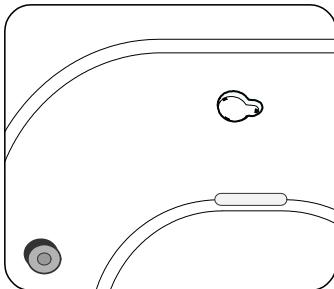
1. Remove the screws by using the supplied spanner.



2. Remove the shipping bolts from the back of the unit.



3. Fill the holes with the supplied plastic caps.

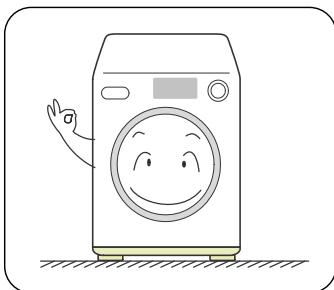


4. Keep the shipping bolts and screws for future use.

### ■ Precautions before Installation



The unit is quite heavy. So, make sure to have 2 or more personnel move it.



Make sure that the unit stands on a firm and leveled floor.



Keep it away from direct sunlight or high humidity, and install it in a place with good ventilation.



Install the unit at a place with a wall outlet easily accessible.



Keep the unit away from places in which it is freezing, especially in winter.



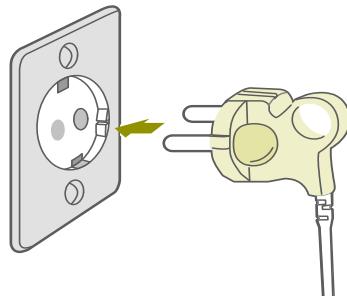
Keep the unit away from heat appliances such as a heater.

## ■ Grounding

\* Make sure to ground the unit to prevent electric leakage or shock.

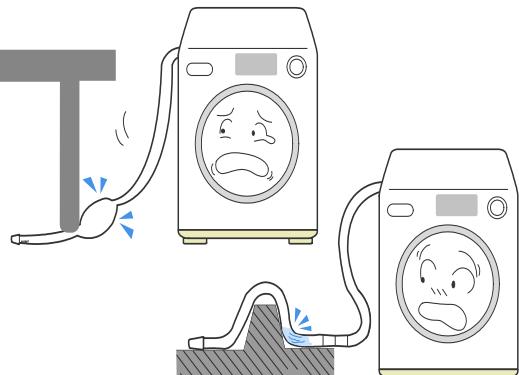
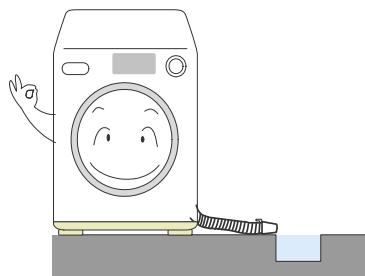
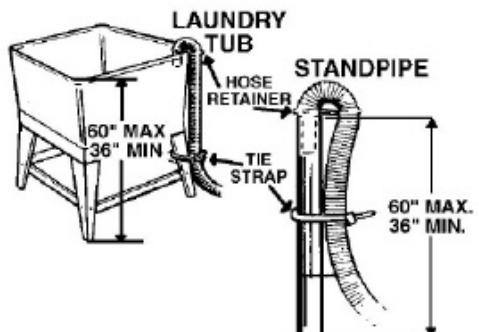
With a grounded receptacle

- ▶ It does not need an additional grounding.



## ■ Water Drainage

- ▶ Hook the drain hose over the Wash Basin or Laundry Tub or plug the end of the drain hose into the Standpipe
  - The end of the drain hose must be passed through the Hose Guide or secured as shown in the picture to prevent it from popping up during drainage of water.
  - The outlet end of the drain hose must be at least 60–90 cm above the base of the machine.
- ▶ Seal the drain pipe connections
  - If not, it may cause water leakage.

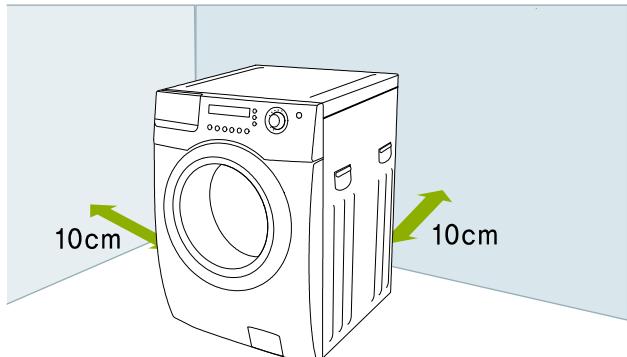


Note: Caution must always be exercised to avoid collapsing or damaging the drain hose. For best performance the drain hose should not be restricted in any way, through elbows, couplings or excessive lengths.

## ■ How to Level the Unit

### 1. Select an installation place.

- ▶ Install the unit with 10cm or more clearance from its surrounding walls.
- ▶ The unit is also available for alcove or closet installation.

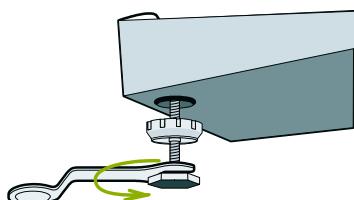
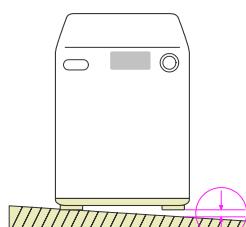
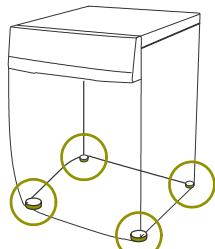


### 2. Check if the unit is leveled.

- ▶ If the unit wobbles, adjust the leveling legs.



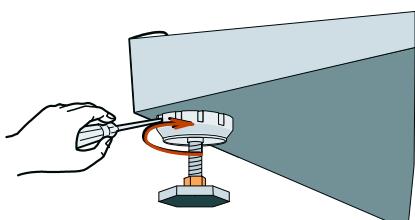
### 3. Adjust the leveling legs.



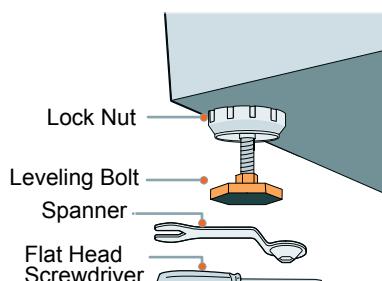
- ▶ The 4 leveling legs should touch the floor all together.

#### When the unit is not leveled

- ▶ Lift up the unit a little bit and adjust the shortest.
- ▶ Turn the leveling bolt counter clockwise as shown in the picture above (The leveling leg gets longer.)



- ▶ After adjusting the leveling bolt, tighten the lock nut by turning it clockwise.



#### \* Caution \*

Tighten the lock nut after the leveling. If not, it could generate vibrations & noises.

---

## 1. Precautions

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### 1-1. Safety Precautions

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**1. Do not allow the customer to repair the product.**

☞ It may cause personal injury or product damage when the unit is serviced by unqualified personnel.

**2. Disconnect power to the appliance before servicing.**

☞ Be aware of the possibilities of an electric shock.

**3. Do not use multi-plug.**

☞ Power outlet may be overloaded causing the socket to overheat.

**4. Check for any damage on power plug or power outlet.**

☞ Replace it immediately if it has problem. (It may cause an electric shock or fire)

**5. Make sure to earth the product.**

☞ May cause electric shock.

**6. Do not clean the product with water.**

☞ May cause electric shock / fire or shorten product life.

**7. The wiring harness should be free from moisture and connected properly during serving.**

☞ It should be proof against any external force.

**8. Remove any dust or dirt in the product, wiring section and connections during servicing.**

☞ Protect against possibilities of fire due to tracking etc.

**9. Check for any water trace on electrical parts, harness, etc.**

☞ Replace the parts and /or wipe dry the water.

**10. Check the assembled status of the parts after servicing.**

☞ Check if the product is assembled in the same status as before servicing.

**11. Be sure not to pull on the power cord but to unplug it by holding the plug.**

☞ Beware of possibility of electric shock or fire when the power cord is damaged.

**12. Unplug the power plug from the outlet when the washing machine is not used.**

☞ Beware of possibility of electric shock or fire while lightening.

**13. Do not use or put flammable materials (including gasoline, alcohol, thinner etc) around the washing machine.**

☞ Flammable materials may spark an explosion or fire.

**14. Do not put a water containing bowl or wet laundry on the washing machine.**

☞ It may cause an electric shock or fire, or shorten the product life when its water penetrates into the washing machine.

**15. Do not install the washing machine in a place where it is exposed to snow or rain etc.**

☞ It may cause an electric shock or fire and shorten the product life.

**16. Do not press control buttons with pointed objects such as pins, needles, etc.**

☞ It may cause an electric shock or other problems.

**17. Check the washing machine is leveled horizontally on the floor and is installed properly.**

☞ Vibration may shorten the product life.

**18. Make sure to use connectors when connecting wires.**

☞ If wires are connected without connectors, it may cause a tracking fire.

**19. When the washing machine is to be laid down for servicing, put a pad on the floor and lay the product on its side slowly.**

☞ If the wash machine is laid on its front, internal components may be damaged by the tub.

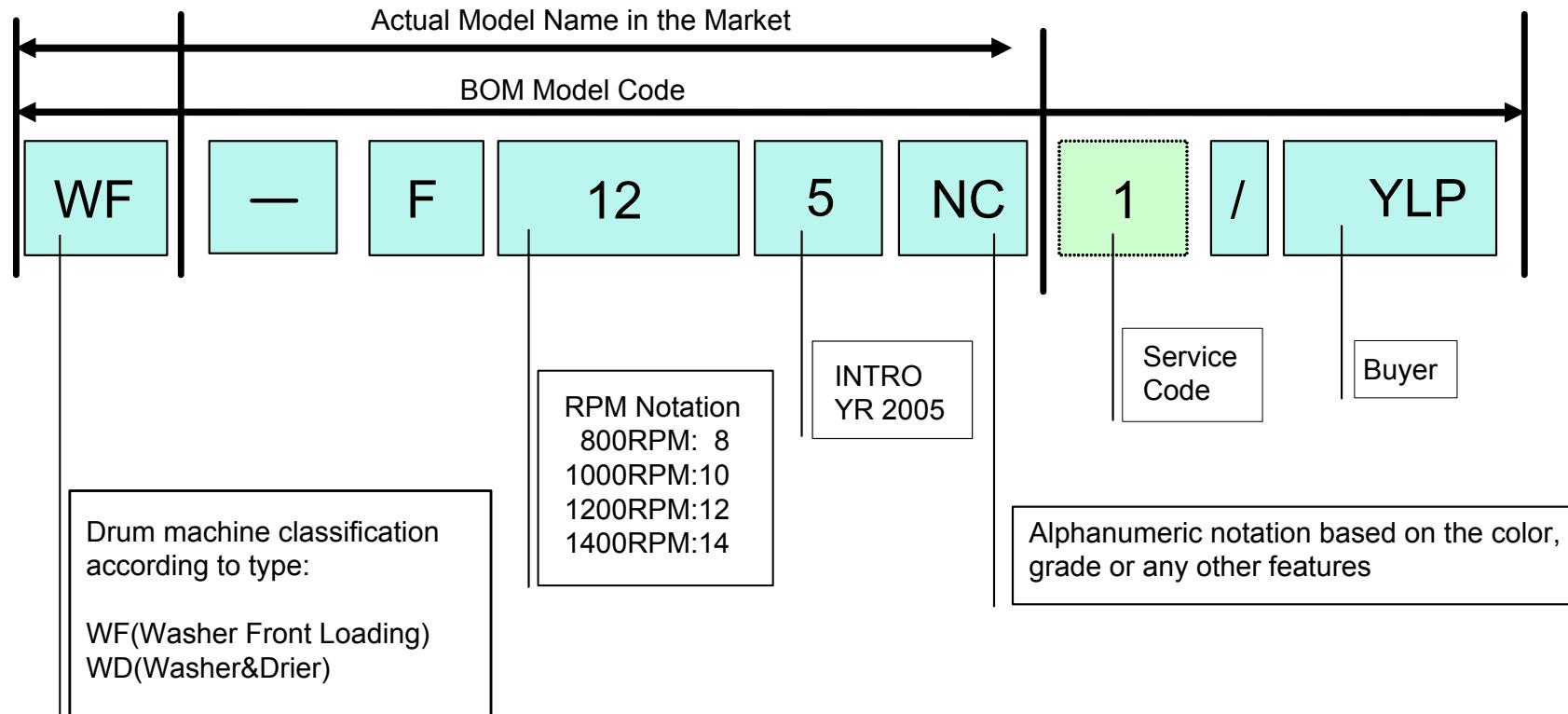
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## 11. REFERENCE INFORMATION

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### 11-1. MODEL NAME

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## **11-2. TERMINOLOGY**

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### **1) ASSY-MAIN PCB (Imbalance Sensor)**

- To prevent the laundry from gathering on one side of the tube causing noise and vibration, the washing machine uses an imbalance detection device that evenly disentangles the laundry before the hydrating cycle starts.

### **2) DOOR-LOCK S/W**

- Prevents the door from being opened while a cycle is in progress. For safety purposes, it keeps the door locked even in pause mode or after the washing cycle unless the water level frequency is greater than 24.8Khz (anti-overflow level) or the inside-tube temperature is less than 65°C in the hydrating cycle, and 55°C in the washing cycle.

### **3) SENSOR-PRESSURE (Anti Over-Flow)**

- When the water supplied is more than 2/3 of the tube capacity due to a malfunction of the water supply valve, this device automatically starts water-draining and displays "OVER-FLOW ERROR(E3)" on the LED.

### **4) THERMISTOR**

- Keeps sensoring and controlling the temperature inside the tube to keep it below your settings.

### **5) ASSY-THERMAL FUSE (Anti Over-Heat)**

- When the washing heater is overheated due to an error in the thermistor or any other malfunction, the assy-thermal fuse (built in the heater) is automatically activated to disconnect the power for your and the product's safety.

### **6) ASSY-MAIN PCB (Sensitive Laundry Protection)**

- To avoid any damage to sensitive laundry, the tube temperature is detected and "ERROR(E8)" is displayed on the LED for Wool or Lingerie courses when the temperature is over 50°C.

### **7) THERMOSTAT (Anti Over-Heat)**

- When the heater (drier) overheats from an error in the thermistor or any other malfunction, the thermostat (installed on the drying duct) is automatically activated to disconnect the power for your or product's safety

### **8) CHILD LOCK**

- Prevents children from playing with the washing machine.

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## **9) PRE-WASH**

- The machine does a preliminary wash of about 10 minutes prior to the main wash. This is particularly effective for cleaning badly stained laundry.

## **10) WEIGHT SENSOR**

- The tube automatically rotates when no water is supplied to detect the laundry weight so that the proper wash time can be determined. (Standard, Boiling, Economy Boil and Dirt courses and Toweling and Drying cycles)

### 11-3. FABRIC CARE CHART

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	Resistant material		Can be ironed at 100°C max
	Delicate fabric		Do not iron
	Item may be washed at 95°C		Can be dry cleaned using any solvent
	Item may be washed at 60°C		Dry clean with perchloride, lighter fuel, pure alcohol or R113 only
	Item may be washed at 40°C		Dry clean with aviation fuel, pure alcohol or R113 only
	Item may be washed at 30°C		Do not dry clean
	Item may be hand washed		Dry flat
	Dry clean only		Can be hung to dry
	Can be bleached in cold water		Dry on clothes hanger
	Do not bleach		Tumble dry, normal heat
	Can be ironed at 200°C max		Tumble dry, reduced heat
	Can be ironed at 150°C max		Do not tumble dry

### 11-4. ELECTRICAL WARNINGS

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To reduce the risk of fire, electrical shock, and other injuries, keep these safety precautions in mind:

- . Operate the appliance only from the type of power source indicated on the marking label.  
If you are not sure of the type of power supplied to your home, consult your appliance dealer or local power company.
- . Use only a grounded or polarized outlet. For your safety, this appliance is equipped with a polarized alternating current line plug having one blade wider than the other.  
This plug will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug still doesn't fit, contact your electrician to replace your outlet.
- . Protect the power cord. Power supply cords should be routed so that they are unlikely to be walked on or pinched by items placed on or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.
- . Do not overload the wall outlet or extension cords. Overloading can result in fire or electric shock.

## 11-5. Q & A

NO.	Type	Part	Situation	Solution method	Before consulting	cause	
1	DRUM WASHER (MODEL NAME :Q1*3*)	appearance part	Being opened & closed bad/Being attached & detached bad	AS rerecommended		In case of a cover not being opened or closed	☞ Door is not closing well. It is not drying the clothes to the safe level. It is not saving energy.
2	DRUM WASHER (MODEL NAME :Q1*3*)	appearance part	Label(sticker) being detached	consulting	...for the specification or label of product lead the customer to attach directly or send the engineer to do so. For other advertisement or PR label it may not be attached.		► Is it the label is not attached? It is for advertisement purpose. It is for advertising purpose.
3	DRUM WASHER (MODEL NAME :Q1*3*)	appearance part	Accessories being not included	AS rerecommended	..Check whether the components are same as those in the manual. If not contact to SVC.		☞ Sir we recommend you to buy our product which is best to clean clothes.
4	DRUM WASHER (MODEL NAME :Q1*3*)	appearance part	Color coming off/rust	AS rerecommended		It may be occurred when the machine is installed in the humid place which causes the rust or discoloring.	☞ Being rusted to the times of replacement. It is due to the location.
5	DRUM WASHER (MODEL NAME :Q1*3*)	display part	Display part being not lit up/not being cleared	AS rerecommended		It is a symptom occurred when it is installed in the humid place or the water is entered its inside.	☞ Dry the front panel. Contact to the engineer's office.
6	DRUM WASHER (MODEL NAME :Q1*3*)	display part	Character being broken on display	AS rerecommended			☞ In this case, the character is broken on the display.
7	DRUM WASHER (MODEL NAME :Q1*3*)	display part	Display not being cleared	AS rerecommended			☞ In this case, the display is not being cleared.
8	DRUM WASHER (MODEL NAME :Q1*3*)	display part	Display malfunction	AS rerecommended			☞ In this case, the display has a malfunction.
9	DRUM WASHER (MODEL NAME :Q1*3*)	door related	Door sensor not being detected	Others			☞ In this case, the door sensor is not being detected.
10	DRUM WASHER (MODEL NAME :Q1*3*)	a noise	A noise being occurred intermittently during washing	General consulting		Please check whether a washer is installed and used with removing the safety device positioned at its rear.	☞ You are not using the safety device. It is removed and not installed.
11	DRUM WASHER (MODEL NAME :Q1*3*)	a noise	A noise being occurred intermittently during dehydrating	General consulting	..Make a comment for the customer to prepare the memorandum since he can not be familiar with the contents	Did you remove the washer safety device? It may be occurred when the laundry is leaned to one direction or the machine is not aligned.	☞ Please clean the laundry in the direction as mentioned in the instruction manual. It is inside such a condition.

15	DRUM WASHER (MODEL)	a noise	Water leakage being occurred at water supply connection	상담		Lead to reassembe when water supply hose is departed.	Disconnect
16	DRUM WASHER (MODEL)	water leakage related	Water being overflowed from detergent box(front loading washing machine)	General consulting		It may be used with so much detergent or left alone for a long time without use.	☞ If the detergent box is full, it may be used with so much detergent or left alone for a long time without use.
17	DRUM WASHER (MODEL)	water leakage related	Water been leaked to floor	General consulting		It is a symptom occurred when the hose of bottom water drain is departed or torn off.	► Check the bottom water drains.
18	DRUM WASHER (MODEL NAME :Q1*3*)	water leakage related	water being leaked at water supply connection part	General consulting		It may be occurred when it is pushed out due to the water pressure or it has bad connection.	► Disconnect the water supply connection because the water pressure is too high or there is difficult installation. You can buy it at the parts store.
19	DRUM WASHER (MODEL)	water leakage related	Water leakage being occurred during water supply	General consulting		The leakage during water supply can occur possibly due to the bad connection of tap and coupler and water supply hose.	☞ First re-adjust the water supply connection.
20	DRUM WASHER (MODEL)	water leakage related	Natural drain(continually)/water not filling tub	General consulting		It can be appeared at the drum washing machine of which the drain hose is located at the bottom.	► For the natural drain(continually), take up and fix it. For the water not filling tub, check all water supply connections.
21	DRUM WASHER (MODEL NAME :Q1*3*)	smell/smoke	Burning smell	General consulting		For the initial use of product It may appear during the operation with coupling each other but it carefully watched by the customers who are using more than for 3 years.	► Is that a burning smell? After 4~5 days of use, if the smell continues, contact the engineer.
22	DRUM WASHER (MODEL)	smell/smoke	Burning/smoke	General consulting	Pull out the plug in case of smoke or fire.	It can be shown in case that the interior components of the products do not work normally.	☞ In this case, pull out the plug in case of smoke or fire.
23	DRUM WASHER (MODEL NAME :Q1*3*)	power source related	Power not supplied	AS rerecomm ended		It can be shown in case that the power cord is not inserted or electricity is blacked out or the interior components of the products do not work properly.	☞ Take out the power cord and insert it again. If the problem continues, contact the engineer's office.
24	DRUM WASHER (MODEL)	power source related	Current leakage breaker being dropped	General consulting		It may be occurred when the humidity is full inside the machine.	☞ In this case, check the current leakage breaker.
25	DRUM WASHER (MODEL)	power source related	Automatic stop during operation	AS rerecomm ended		It may be occurred when there are too much laundry.	► Reduce the laundry amount. Contact the engineer's office.
26	DRUM WASHER (MODEL)	power source related	Being power off frequently	AS rerecomm ended		It may be occurred in case of the bad contact of button.	☞ In this case, check the power button.

29	DRUM WASHER (MODEL NAME :Q1*3*)	4E :front loading washing machine error	Water level sensor inferiority	AS rerecommended		This may be happened when there is any foreign material inside the water supply and drain valve or the interior components of the products do not operate normally. ◉ Water level sensor or mother rotation.	Disconnect material inser
30	DRUM WASHER (MODEL NAME :Q1*3*)	5E :front loading washing machine error	Water being not drained	AS rerecommended		It may be occurred when the drain hose is go over the threshold or water is not drained. It may eb occurred when the The filter of pump-drain moder is fulled with dregs,	Check the in engineer's in Clean the filt
31	DRUM WASHER (MODEL)	OE :front loading washing machine error	3E OVER-FLOW	General consulting		It may be a case that the supply water level is not detected.	After Drain after so doin
32	DRUM WASHER (MODEL)	UE :front loading washing machine error	4E UNBALANCE ERR	General consulting		It may be happened when the floor of the installed palce is not flat or the clothes are entangled.	Level the ma after so doin
33	DRUM WASHER (MODEL)	HE1 : front loading washing machine error	E5 WATER HEATER ERR	General consulting		It may happen when the boiling temperatuer rised rapidly. (It is also because too much detergent are used.)	Use the prop is cooled dow And if it does
34	DRUM WASHER (MODEL)	HE : front loading washing machine error	E6 WATER HEATER ERR	AS rerecommended		It may appear when it dose not reach to the set temperature within a certain time.	In this cas
35	DRUM WASHER (MODEL)	1E :front loading washing machine error	E7 Water level sensor ERR	AS rerecommended		It may happen when there is a trouble in air hose or water level sensor.	In this cas
36	DRUM WASHER (MODEL)	cE : front loading washing machine error	E8 Abnormal water temperature ERR	AS rerecommended		Check whether the hose for hot and cold water is connected to the water supply hole.	Check wh and if it does
37	DRUM WASHER (MODEL)	8E : front loading washing machine error	E9 Water leakage ERR	AS rerecommended		Check whether there is foreign material inserted in the drain filter.	In this cas
38	DRUM WASHER (MODEL)	tE :front loading washing machine error	E9 Water leakage ERR	AS rerecommended		Check whether there is foreign material inserted in the drain filter.	In this cas
39	DRUM WASHER (MODEL)	11E : front loading washing machine error	E9 Water leakage ERR	AS rerecommended		Check whether there is foreign material inserted in the drain filter.	In this cas
	DRUM WASHER (MODEL)	door : front loading washing machine error	Ed:Door being not opened	AS rerecommended		It may appear when the the door is opened a certain minutes after the completion of washing or the electricity is interrupted in running.	► There is a handle to op

43	DRUM WASHER (MODEL NAME :Q1*3*)	water supply related	Water being supplied little	General consulting		It may appear when the tap is not opened properly or there is a foreign material inside. ► Is it checked inserted? If the hose of entrance. C
44	DRUM WASHER (MODEL	water supply related	Detergent being remained	General consulting		It may appear when the long-term used detergent is not well soluted or when the water temperature is low during winter. ☞ Solve the If it is not s
45	DRUM WASHER (MODEL NAME :Q1*3*)	water supply related	Water being stopped during the coming in	General consulting		It may appear when the water is cut or the water supply hole is clogged. ► Is it checked the water su blackout pu take out t
46	DRUM WASHER (MODEL	water supply related	Clothes being damaged	General consulting		☞ In this ca
47	DRUM WASHER (MODEL	water supply related	One direction rotation			☞ In this ca
48	DRUM WASHER (MODEL	water supply related	Rotation being not worked after it sounds with buzz			☞ In this ca
49	DRUM WASHER (MODEL	water supply related	Water being not supplied in winter			☞ Make the
50	DRUM WASHER (MODEL NAME :Q1*3*)	rinsing related	Rinse being not put in tub	General consulting		It may appear when the rinse agent remains to clog . ► Did the rin putting the r to the reamo the cap and
51	DRUM WASHER (MODEL	rinsing related	Bubble being remained	General consulting		It may appear when there is too much or too little laundry. ☞ If there is the laundry
52	DRUM WASHER (MODEL	water drain related	Water being not drained	General consulting		☞ In this ca
53	DRUM WASHER (MODEL NAME :Q1*3*)	dehydrating related	Dehydrating time being increased again	General consulting	..Make a comment for the customer to prepare the memorandum since he can not be familiar with the contents completely.	The vibration and noise occur when the horizon is broken or the laundry are leaned to one direction. So It may appear when the safety device is operating to prevent it. ☞ If there is severely ent
	DRUM	dehydrating	Washer being worked for four	Specific		If the washing machine consumes hours more ☞ Check w

57	DRUM WASHER (MODEL)	dehydrating related	Not being squeezed well	General consulting		It may appear when there are clothes like vinyl.	► Check whether there is foreign material inside. Prevent the inner drum from being dehydrated. Request an engineer's inspection.
58	DRUM WASHER (MODEL)	dehydrating related	Water being in at purchasing	AS rerecommended			☞ There may be water in the products tested.
59	DRUM WASHER (MODEL)	dehydrating related	Dehydration being not worked at all	General consulting		It may appear when the interior components do not work properly.	☞ In this case, check the interior components.
60	DRUM WASHER (MODEL)	others	Action for water being frozen in winter	AS rerecommended		It may appear when the machine is used at the outside or the veranda.	☞ Pour the water in the drainage hose in to the washing box.
61	DRUM WASHER (MODEL)	others	being clogged/foreign materials	General consulting	....the drainage hose clogged or foreign material inside		☞ After loosening the drainage hose, check whether there is foreign material inside.
62	DRUM WASHER (MODEL)	installation / connection	Consulting for installation of front loading washing machine	General consulting			☞ The drum is tilted. Refer to the rear of drum manual.
63	DRUM WASHER (MODEL)	installation / connection	Level check	Specific consulting			☞ Level it by adjusting the legs.
64	DRUM WASHER (MODEL) NAME :Q1*3*)	installation / connection	Removal/house moving reinstallation	Specific consulting			☞ It is possible that the house and inner drum are tilted. Remove it after leveling it.
65	DRUM WASHER (MODEL)	washing related	Slow speed of washing rotation	General consulting		It may appear when there is too much laundry.	► Check whether there is foreign material inside. Request an engineer's inspection.
66	DRUM WASHER (MODEL) NAME :Q1*3*)	washing related	Clothes being damaged	General consulting		Check whether there is foreign material inside (coin nail and other sharp material) and so it may appear due to the zipper or button of jeans.	☞ Check whether there is foreign material inside (coin nail and other sharp material) and so it may appear due to the zipper or button of jeans. Check whether the inner drum is dehydrating. Except the dehydrating function.



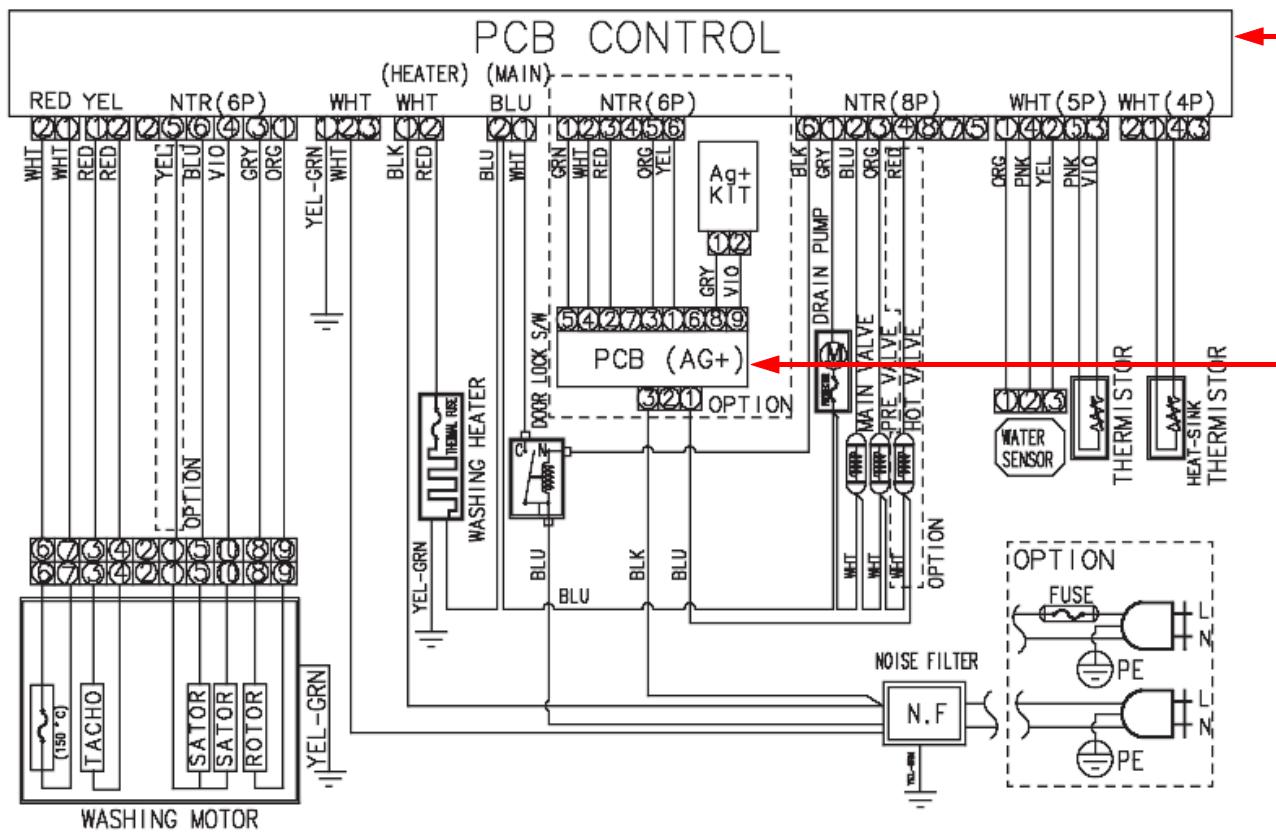
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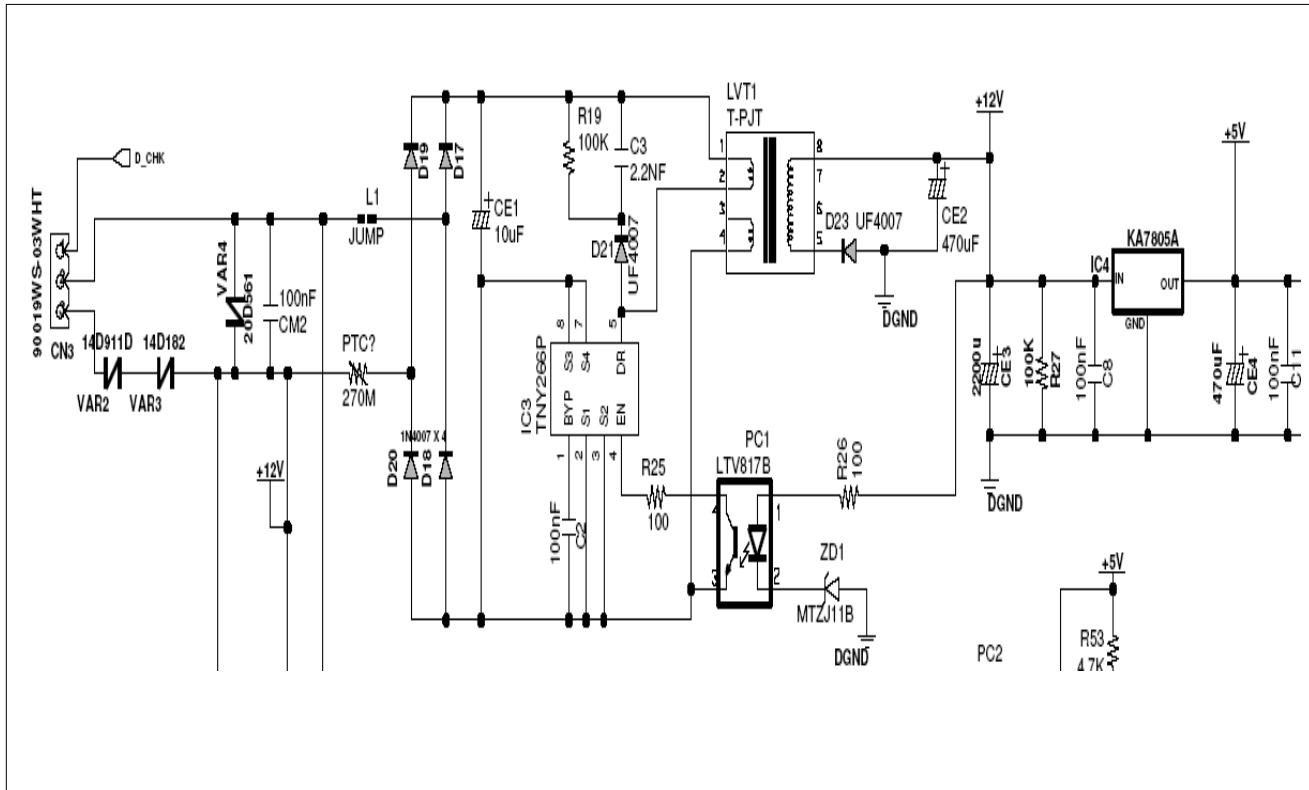
## 12. CIRCUIT DESCRIPTION

### 12-1. OVERALL SYSTEM

SCHEMATIC DIAGRAM



## 12-2. AC Input & Power Circuit



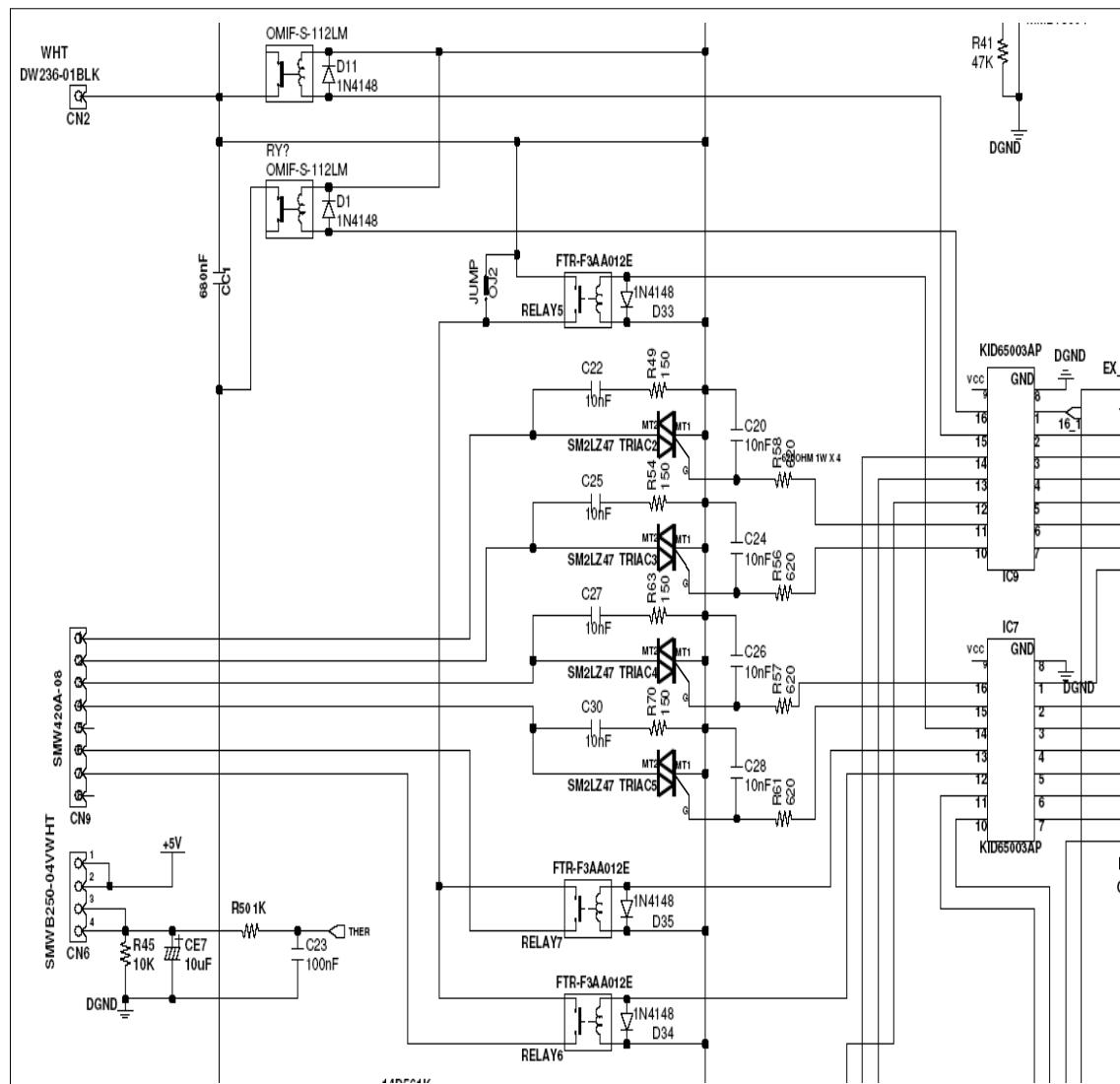
### ► Function

Generates a required DC power of 12V or 5V in case of supplied or disconnected AC power.

### ► Description

- When AC 220V is applied to CN3, D17 turns on, and D20 transforms it to DC 300V.
- DC 300V is generated for the LVT1 secondary source by IC3 and PC1 turning on/off.
- The secondary 12V depends on the ZD1 value.
- The 12V for the LVT1 secondary source is transformed to DC 5V through IC4.

### **12-3. Driving System Circuit**



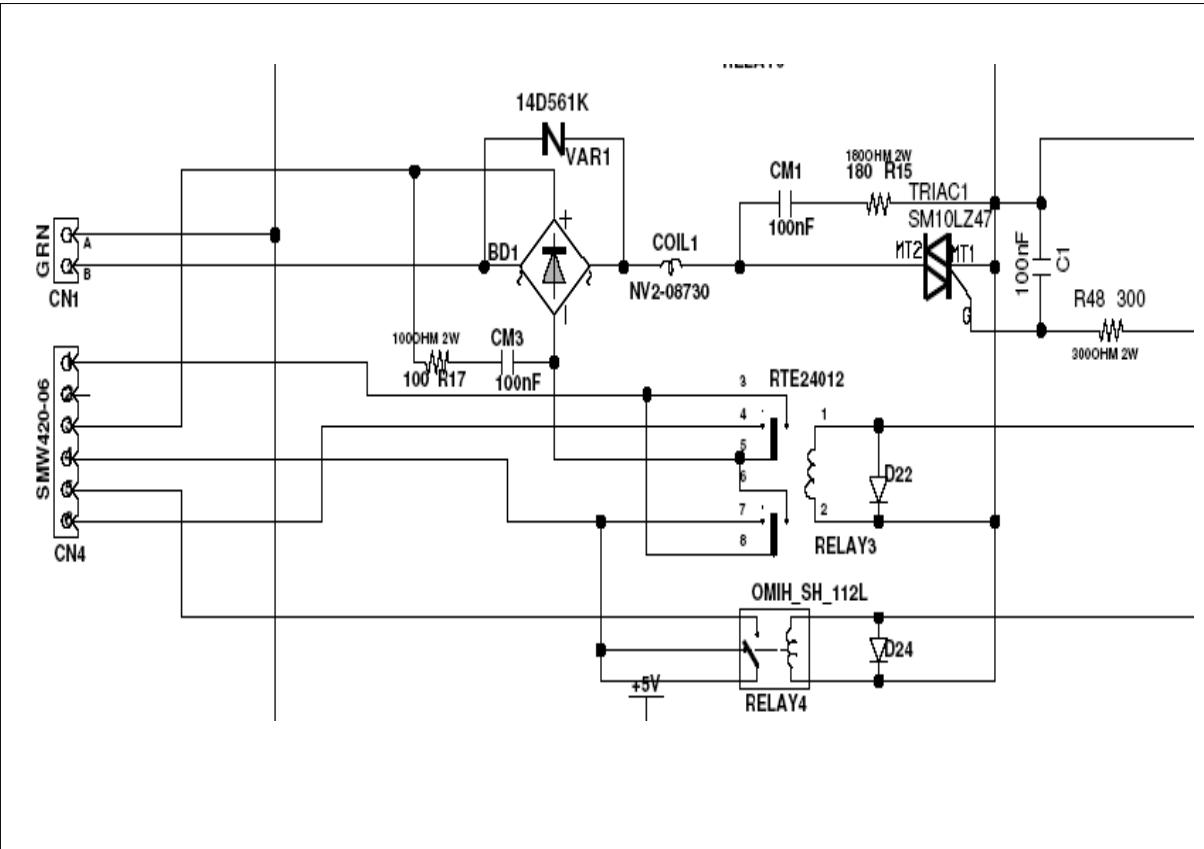
## ► Function

Controls each driving system (VALVE, DOOR S/W, DRAIN-MOTOR) by turning RELAY or TRIAC on/off.

## ► Description

- MICOM outputs a high signal of 5V from pin # 1 - 7 of IC7 and IC9.
  - Then, pin # 10 to 16 of IC7 and IC9 are electrically grounded (0V).
  - When pin # 10 to 16 are grounded, this creates an electric potential difference from the 12V that turns on RELAY 5,6,7 and TRIAC2,3,4,5.
  - The operating parts (VALVE, DRAIN-MOTOR, DOOR S/W) connected to CN9 turn on if they are supplied with power.

## 12-4. Motor Circuit



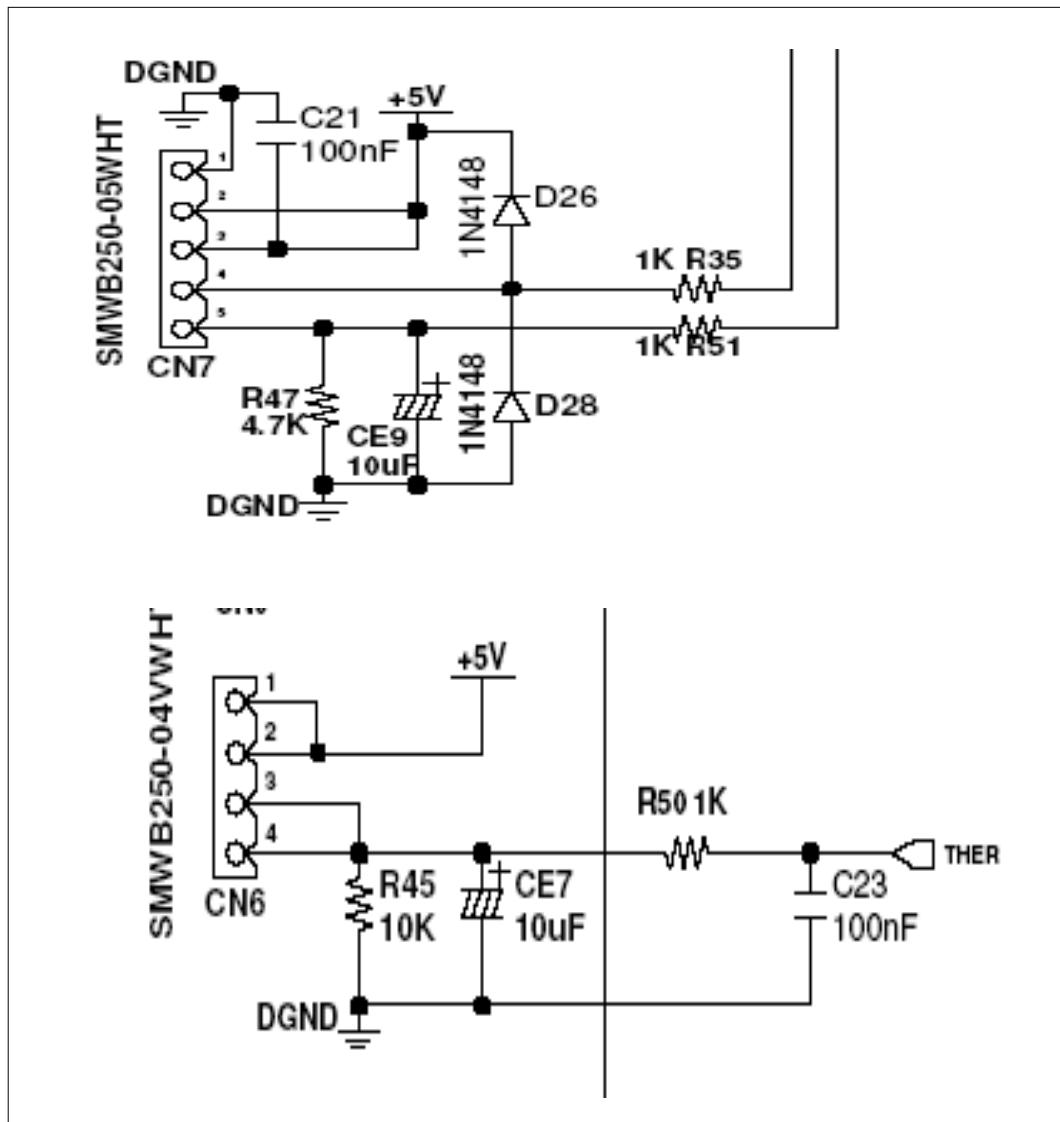
### ▶ Function

Supplies power to the motor and turns it CW/CCW (Right / Reverse direction).

### ▶ Description

- The operation of TRIAC1 is the same as that of the driving system.
- If the electric potential of R48 is grounded (0V), TRIAC1 turns on.
- CN1 detects if the door is locked or unlocked. If unlocked, it does not apply power to the motor even if TRIAC1 turns on.
- If the door is unlocked and TRIC turns on, the motor connected to CN4 is supplied with power and drives CW (right direction).
- Under such conditions, turning RELAY3 on will drive the motor CCW (reverse) as the wiring is switched to CCW.
- Turning RELAY4 on will switch the winding of the motor to one for higher driving.

## 12-5. Sensor Detection Circuit



### ▶ Function

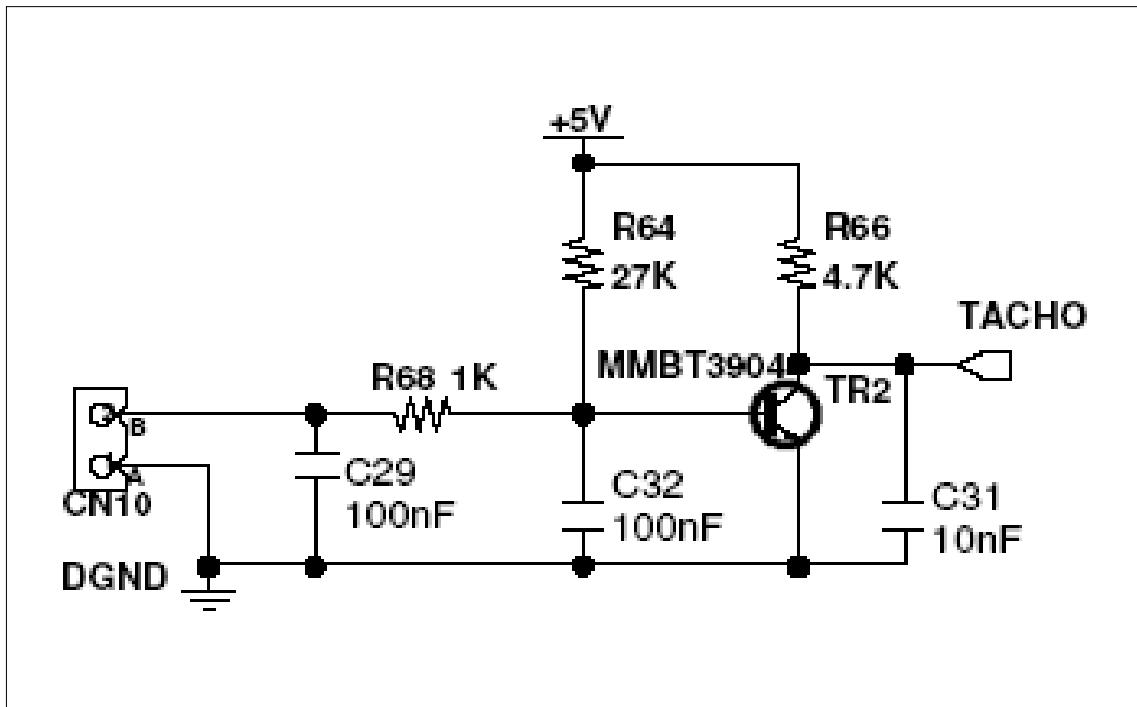
Detects signals from the sensor and controls the current system.

### ▶ Description

- The water level sensor is connected to pin 4 of CN7.
- The frequency of the level sensor changes according to the water amount in the tub.
- Then, the frequency is input to MICOM pin 48 for detecting the water amount.
- The DHSEH sensor is connected to CN7 pin 5 and CN6 pins 3,4.
- The resistance of the temp. sensor changes according to the ambient temperature. The changed resistance is applied to R50 and R51.
- The voltage applied to R50 and R51 is decided according the temp. MICOM stores the value.
- When voltage is applied to MICOM pins 22 and 23, MICOM compares it to the pre-defined one before detecting the current temp.

## 12-6. Motor TACHO Input System

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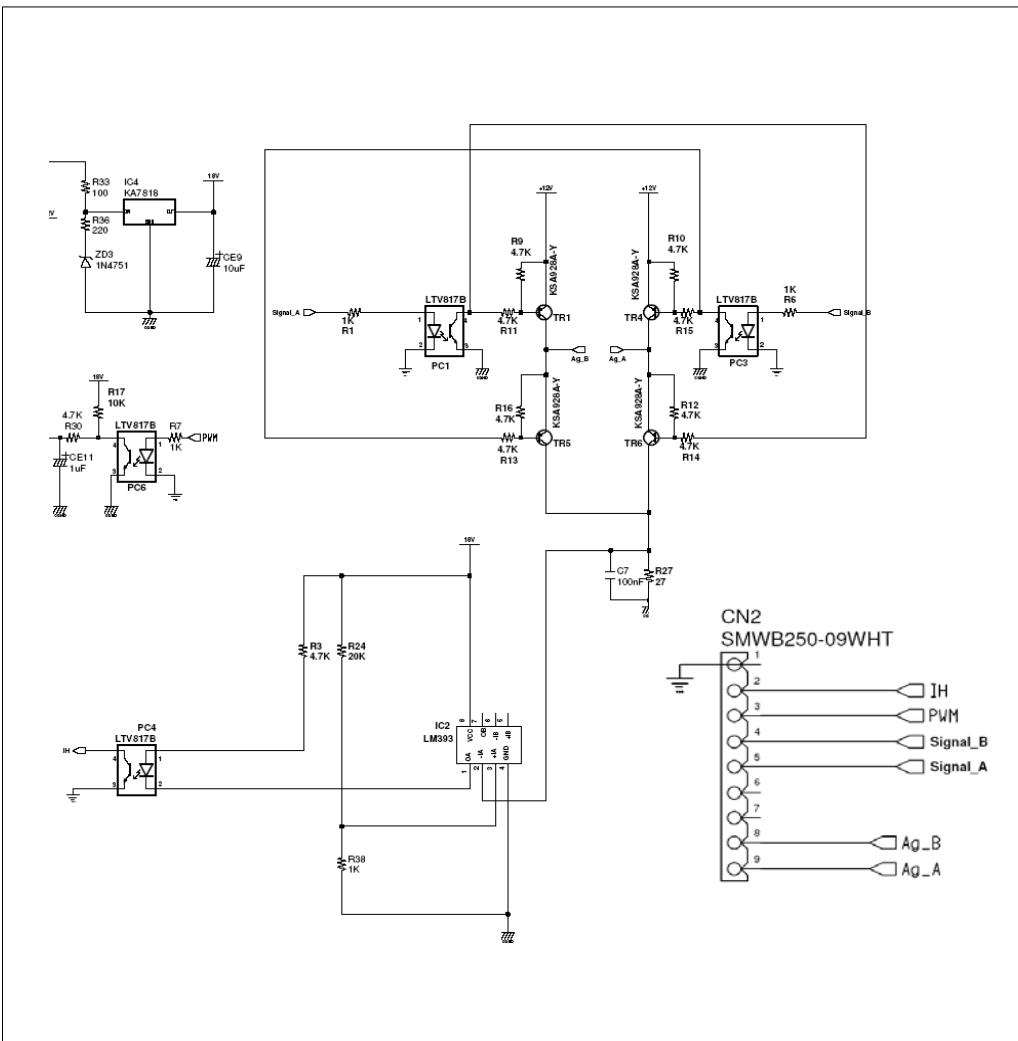
### ▶ Function

Detects the current RPM of the motor and controls the output.

### ▶ Description

- The motor TACHO sensor is connected to CN10 B-pin.
- According to the current RPM of the motor, a square wave is applied to pin 8.
- The square wave that is input to TR2 BASE turns the motor on if high (5V), and turns it off if low (0V). And this operation will be inverted to TACHO NET for a clear wave with no noise.
- The signal is applied to MICOM pin 13. Then MICOM counts the frequency of the input signal and detects the current RPM of the motor.

## **12-7. Silver Nano System**



## ► Function

Applies the electric current to the silver plate during the water supply and uses the silver water to perform the bacteria-free or sterilization processes.

## ► Description

- Selects the silver nano feature to operate the system.
  - Supplies water to the two silver plates AG\_B and AG\_A.  
Then, SIGNAL\_A and SIGNAL\_B output a high signal of 5V.
  - Both SIGNAL\_A and SIGNAL\_B repeat this for 15 seconds outputting a high signal of 5V. SIGNAL\_A output turns TR1 and TR6 on to generate a potential difference between the 12V and the grounding for causing the current to flow. SIGNAL\_B output turns TR4 and TR5 on to generate a potential difference between the 12V and the grounding for causing the current to flow.
  - The flowing current is transformed to a voltage by the resistance of R27.
  - Then, the voltage is applied to IC1 pin 2 and used for detecting and controlling the flowing current.